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## PARTIAL BIBLIOGRAPHY OF VIRUS DISEASES OF PLANTS

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and

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This bibliography was started independently by the two authors for their own personal uses. Upon learning that both were working on the same project, it was decided to combine our efforts and publish the combined manuscripts, hoping that the work would be of value to other students of virus diseases.

Many difficulties were met with in compiling this work. Some of which may be summarized as follows:

1. There are some errors in the many bibliographies that have been published in connection with the numerous papers on this subject. When these errors have come to our attention they have been corrected.

2. There are many short papers of little or no value but it has not always been possible to decide judiciously just which ones should be retained. No doubt we have made many injustices in deciding questions of this kind. Many anonymous papers and many Agricultural Experiment Station Bulletins of a popular character have been omitted. Reports of Directors of Agricultural Experiment Stations which do not include new data have been omitted in most cases. The publications of the Plant Disease Survey of the U. S. Department of Agriculture contains many records which are of value for estimates of losses and for geographical distribution in the United States. Most of these have been omitted unless they contain new records of hosts.

3. Many old papers which are of no value except as historical records have been omitted. Such papers are usually listed in recent publications on virus diseases. For example, the recent paper by Mc Kay and Warner on "Historical Sketch of Tulip Mosaic or Breaking. The Oldest Known Plant Virus Disease" contains many

historical record of this disease which have omitted from this bibliography.

4. Many errors have crept into the literature because the people making the citations did not understand the Spanish system of the names of persons. According to the Spanish system a person carries the names of the two parents; e.g. Rafael Menéndez Ramos. The first is his given name, the second is the name of his father and the third the name of his mother. He should be cited as Rafael Menéndez or as Rafael Menéndez Ramos, but never as R. M. Ramos as occasionally appears. We find him cited by both methods.

5. There is some difference of opinion as to the cause of certain diseases; some workers believing them to be due to viruses and other workers believing them to be due to other causes. Among these diseases may be mentioned the diseases of pecans. The carnation yellows has not been proved to be a virus disease but the symptoms are of such character that we have inserted the references. Recent papers give evidence that the bitter pit of the apple is caused by a virus but our work on the bibliography was so far advanced that we have inserted only a few of the references.

The compilers intend to follow as closely as possible the following features in this bibliography, with the idea of making it more helpful to students and workers.

1. It is arranged alphabetically by authors and chronologically under the name of each author, taking always the senior author as guide in cases of more than one.

2. When it has been possible we have used the authors' full names which enabled us to verify the correctness of many of the citations and avoid confusion and errors in authorship.

3. Titles appear first in the original language with translation into English in parenthesis. In some cases it has not been possible to obtain the original paper and in those cases the translated titles appear in parenthesis. Some titles appear only in the original languages. In cases of slavie or oriental languages the titles are translated into English.

4. When an article appears in more than one publication all except the first appear in parenthesis.

5. We have not been able to see all the original papers on virus diseases of plants. Therefore, there are many which we have been unable to annotate.

The compilers do not claim that this bibliography is complete or without errors but if workers on virus diseases of plants will send their criticisms directly to the compilers, we will endeavor to publish

a supplement in which corrections and additions will be made. All correspondence and all papers should be addressed to the junior author.

In the preparation of the manuscript we are very much indebted to the kind and valuable assistance of Dr. John Hendle Barnhart, of the New York Botanical Garden, who made many corrections and gave many suggestions, to Hon. Carlos E. Chardon, Chancellor of the University of Puerto Rico, Hon. Rafael Menéndez Ramos, Commissioner of Agriculture and Commerce, Mr. Rafael Fernández García, Ex-Director of the Insular Experiment Station of Puerto Rico, Mr. Francisco A. López Domínguez, Director of Insular Experiment Station of Puerto Rico, for their advice and moral support in the preparation and publication of this manuscript.

**Abbott, E[rnest] V[ictor], & Townsend, Charles H[enry] T[ylor]**

El mosaico de la caña de azúcar y su trasmisión. (Sugar cane mosaic and its transmission.) Perú Est. Expt. Agric. Soc. Nac. Agraria, Circ. 5, 10 p., 1928.

Popular discussion of the subject.

-----, & Wolcott, G[eorge] N[orton]

Mosaic of sugar cane in Perú. Science 69(1788):381, 1929.

Account of the occurrence of mosaic disease of sugar cane in Perú and of the abundance of *Aphis maidis* Fitch. its insect vectors.

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Diseases of economic plants in Perú. Phytopathology 19(7): 645-656, 1929.

Brief reference to mosaic of sugar cane.

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A new host for sugar cane mosaic. Phytopathology (Abstract) 20(1):109, 1930.

Refers to our "caña india" known in Perú as "caña brava" (*Gynerium sagittatum*). Growing in or near cane fields becomes infested with mosaic.

**Adam, D. B.**

Degeneration of potatoes. Virus diseases and their control. Jour. Dept. Agric. Victoria 30:7-11, 1932.

**Adams, J[ames] F[owler]**

Lima bean and tomato mosaic. Delaware Agric. Expt. Sta. Circ. 14, 29 p., 1924.

**Adams, R[ichard] L[aban]**

The California beet blight. Thesis submitted to the University of California for M. S. Degree, 1909.

**Afzal Husain, M.**

Leaf-curl in cotton. *Nature* **124**: 958, 1930.

Leaf-curl or crinkle in Sudan. Transmitted by an undetermined white fly (*Aleurodidæ*). *Empoasca devastans* is considered a cause of one form of leaf crinkle.

**Agee, H[amilton] P[o]pe]**

Sugar cane diseases in the Hawaiian Islands. *Proc. H. S. P. A.* **37**: 38-39, 42-43, 68-76, 77-78, 1917.

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Sugar cane diseases. *Proc. H. S. P. A.* **39**: 153-156, 1919.

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Sugar cane diseases. *H. S. P. A. Expt. Stat. Ann. Rpt.* **1920**: 18-21, 1920.

-----  
Resistance to diseases and adverse conditions by hardy sugar cane types. *Louisiana Planter* **72**(2): 75-76, 1924. (*Australian Sugar Journ.* **16**: 49-53, 1924.)

-----  
Report of the Committee in charge of the Experiment Station of the Hawaiian Sugar Producers' Association for the year ending September 1931. *Inter. Sugar Journ.* **34**(399): 101-102, 1932.

Notes on several diseases of sugar cane among which it is stated that mosaic disease of sugar cane is still present, but declining. Its effects are unremitting and sometimes serious. Also states that the origin of chlorotic streak disease remains unsolved, though control methods are known.

**Ahr, J[oseph], Mayr, Chr., & Worle**

Ernteliehe, knollensarbe und Blattrollkrankheit Kartoffeln in bezielung zu boden und Düngung. (Crop yield, tuber color, and leaf-roll of potato in relation to soil fertilizer.) *Fuhling's Landw. Zeitg.* **64**(17-18): 425-452, 1915.

**Ainsworth, G. C.**

Mosaic disease of the tomato. *Expt. & Res. Sta. Cheshunt Herts.*, 17th. *Ann. Rpt.* **1931**: 42-43, 1932.

Juice from striped tomato plants inoculated into healthy plants produced mild mosaic in a majority of the cases. Stripe was produced in less than 40 per cent.

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Virus disease investigations (a) Spotted wilt of tomatoes. (b) Mosaic and "stripe" disease of tomatoes. *Expt. & Res. Sta. Cheshunt Herts. Ann. Rpt.* **18**: 39-45, 1933.

Account of observations made during 1932. Inoculation experiments and list of host plants and insect vectors. Some suggestions for control measures are given.

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An investigation of tomato virus diseases of the mosaic "stripe", streak group. *Ann. Appl. Biol.* **20**(3): 421-428, 1933.

Tomato mosaic was studied, described and compared to other types of virus diseases and spotted wilt.

**Alamo Ibarra, Roberto**

El mosaico, matizado o rayas amarillas de la caña de azúcar. (Mosaic, mottling or yellow stripe disease of sugar cane.) Venezuela Min. de Fomento, Pamphlet, 55 p., 1927.

Popular discussion of mosaic of sugar cane under Venezuelan conditions.

**Alben, A. O., Cole, J[ohn] R., & Lewis, R. D.**

Chemical treatment of pecan rosette. *Phytopathology* **22**(12): 595-601, 1932.

The authors were able to improve old rosetted leaves and bring young ones back to normal by dipping or spraying them with a solution of ferric sulphate or ferric chloride, ranging in strength from 0.6 to 1 per cent. These findings would seem to indicate that pecan rosette is a condition of iron chlorosis.

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New development in treating pecan rosette with chemicals. *Phytopathology* **22**(12): 979-981, 1932.

A short paper giving the results of spraying trees with zinc and iron salts. These results indicate that zinc is an essential element for the healthy development of the trees.

**Alexander, Jerome**

Bacterial filters and filterable viruses. *Science* n.s. **65**(1678): 207, 1927.

A very brief paper on bacterial filters and filterable viruses in general, in which the author discusses several types of filters. No reference to plant viruses.

**Alfaro, Julio**

A method of fighting the propagation of mosaic disease in sugar cane. *Planter & Sugar Manuf.* **75**(20): 388-389, 1925. (*Sugar* **28**(1): 45, 1925. *Trop. Agric. (Ceylon)* **66**(2): 113-114, 1925. *El Mundo Azucarero* **13**(5): 150, 1925. *Proc. Agric. Soc. Trinidad & Tobago* **25**(2): 437-439, 1925.)

Recommends the use of resistant varieties.

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Statement on mosaic control. Proc. Conf. Int. Soc. Sugar Cane  
Tech. (Havana) 2: 9199, 1927.

**Allard, H[arry] A[rdell]**

The mosaic disease of tobacco. Science n.s. 36(938): 875-876,  
1912.

The author's first paper on this subject, in which he gives a brief  
statement of the results of inoculation experiments and some of the  
symptoms. It is not produced by cutting back and not carried in  
the pollen. Also calls attention to the presence of aphids and sug-  
gests that the disease is probably due to a living active micro-  
organism.

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The mosaic disease of tobacco. U.S.D.A. Bull. 40, 33 p., 1914.

More extensive than the preceding. Gives special attention to cross  
inoculation experiments and to symptoms. Produced the disease by  
root inoculation and gives evidence that the disease is carried by *Ma-  
crosiphum tabaci* Perg.

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A review of the mosaic disease of tobacco, together with a bib-  
liography of the most important contributions. Bull. Torrey  
Bot. Club 41(9): 435-458, 1914.

An excellent review of the literature to date.

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Distribution of the virus of the mosaic disease in capsules, fla-  
ments, anthers and pistils of affected plants. Journ. Agric.  
Res. 5(6): 251-256, 1915.

Demonstrated that the virus penetrated to all parts of the plant  
except the seeds.

-----  
Effect of dilution upon the ineffectivity of the virus of the  
mosaic disease of tobacco. Journ. Agric. Res. 3(4): 295-  
299, 1915.

Gives effects of dilution of the virus. 1-1000 fully as effective as  
pure juice. 1-10,000 much less effective than pure juice. Believes  
the disease due to a parasite and not due to an enzyme.

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Some properties of the virus of the mosaic disease of tobacco.  
Journ. Agric. Res. 6(17): 649-674, 1916.

A very thorough study of the properties of the virus with reference to  
chemicals and temperature. Believes that the disease is due to an  
ultramicroscopic parasite.

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The mosaic disease of tomatoes and petunias. *Phytopathology* 6(4) : 328-335, 1916.

Gives the results of experiments with the mosaic disease of tomatoes and petunias which is in harmony with preceding studies on the mosaic of tobacco.

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A specific mosaic disease in *Nicotiana viscosa* distinct from mosaic of tobacco. *Journ. Agric. Res.* 7(11) : 481-486, 1916.

The author gives evidence indicating that mosaic of *N. viscosa* is different from the ordinary mosaic of *N. tabacum* and the tomato (*Lycopersicum esculentum*.)

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Further studies of the mosaic disease of tobacco. *Journ. Agric. Res.* 10(12) : 615-632, 1917.

The active agent does not penetrate readily when sprayed on plants but does penetrate very slight wounds. Easily removed from hands by washing. Killed in soil by steam sterilization. *Nicotiana glauca* is susceptible. Is carried by *Myzus persicae*.

-----  
Mosaic disease of *Phytolacca decandra*. *Phytopathology* 8(1) : 51-54, 1918.

Experimental evidence indicates that the mosaic of tobacco and *Phytolacca decandra* are different. The active agent overwinters in the plant.

-----  
Effects of various salts, acids, germicides, etc., upon the infectivity of the virus causing the mosaic disease of tobacco. *Journ. Agric. Res.* 13(12) : 619-637. 1918.

Gives the results of extensive experiments to determine the effects of many chemicals on the virus causing mosaic of tobacco.

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Abnormalities in *Nicotiana*. *Bot. Gaz.* 65(2) : 175-185, 1918.

A description of abnormalities resulting from mosaic.

-----  
Some possible relationships of the mosaic diseases. *Phytopathology* 13(12) : 555-557, 1923.

A presentation of unsettled problems in connection with the study of the mosaic disease.

### **Allen, F[rank] W[isdom]**

Maturity and rate of ripening of Gravenstein apples in relation to bitter pit development. *Amer. Soc. Hort. Sci. Proc.* 28 : 639-645, 1931.

Report of observations correlating maturity and bitter pit. Different treatments are reported.

**Altson, R[alph] A[bbey]**

Report on a suspected outbreak of infectious mosaic disease among certain canes in the colony. Journ. Bd. Agric. British Guiana. 18(3):216-225, 1925. (Int. Sugar Jour. 27(318):293, 1925.)

Mosaic is the most serious problems in Jamaica. Gives record of losses.

**Amaral, Afranio de**

Pompen do mosaico. Bol. Agric. (Sao Paulo) Brasil 27:147-156, 1926.

**Amos, J., Hatton, R[oland] G[eorge], Knight, R[obert] C[edric], & Masee, A. M.**

Experiments in the transmission of reversion of black currant. East Malling Res. Sta. Ann. Rpt. Suppl. 15:43-46, 126-150, 1927.

The disease was produced by transferring big-bud mites from diseased to healthy plants, by grafting and inarching.

-----  
Reversion of black currants. Its incidence and spread in the field in relation to possible control measures. Journ. Pomol. Hort. Sci. 6(3):167-183, 1927, (4):282-295, 1928.

The vector appears to be the big-bud mite *Eriophyes ribis*.

**Anderson**

Die wirkung der Viruskrankheiten der Kartoffel. (The effect of virus diseases of potatoes.) Prakt. Blät. Pflanzenbau u. Pflanzen. Schutz. 3:132-136, 1925.

**Anderson, F. G.**

The phony peach disease in Illinois. Trans. Illinois State Hort. Soc. 66:214-217, 1933.

Popular description of the disease, warning to farmers to eradicate it. Has been known in Illinois since 1927.

**Anderson, H[arry] W[arren]**

Spinach mosaic. Illinois Acad. Sci. Trans. 15:130-140, 1922.

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Control of bramble diseases. Kansas State Hort. Soc. Bienn. Rpt. 11:162-167, 1930.

**Anderson, James**

On the disease called the curl in potatoes, and some other particulars observed with regard to this plant. Bath Soc. paper 2d. ed. 4:92-107, 1792.



- Annaud, P. M., Chamberlain, J. C., Henderson, C. F., & Waters, H. A.**  
Movement of the beet leaf hopper in 1930 in Southern Idaho.  
U.S.D.A. Circ. **244**, 24 p., 1932.

Although this paper is not on virus diseases, we included it, because of the great interest for the students on the subject, due to its close relationship.

### Anonymous

Abridgment of several letters published by the Agricultural Society at Manchester in consequence of a premium offered for discovering the cause of the curled disease in potatoes. Letter No. V. Letters and Papers on agriculture, etc. Bath and West of England Society, Vol. **I**, 4th ed., p. 240-242; Letter IX p., 246; Letter XI, p. 248; Letter XV, p. 252; Letter XVI p., 252-253; Letter XVII, p. 254; Letter XVIII, P. 255, 1792.

Historical value only.

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On the curl in potatoes, with a radical cure. *Ann. of Agric.* **31**, 1798.

Historical value only.

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Plan for preventing the curl in potatoes. *Farmer's Mag.* **3**: 13, 1802.

Historical value only.

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Die blattrollkrankheit der Kartoffel. (The leaf roll disease of potato.) *Zeitschr. Land. Versuchsw. Osterr.* **14**(7): 911-915, 1911.

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Gele strepenziekte. (Yellow stripe disease.) *Meded. Arch. Java Suikerind.* **20**: 1590-1593, 1912.

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Plant disease in 1915. *Phytopath. Lab. Willie Commelin Schotten* 1915, p. 18, 1916.

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Mosaic disease of cucumber. *Market Growers Journ.* **19**: 34, 1916. (*Amer. Flor.* **46**: 1164, 1916.)

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Mosaic disease of tobacco and tomatoes. *Gard. Chron.* 3 ser. **59**(1526): 172-173, 1916.

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(Dwarf disease of barley.) Journ. Plant. Protec. **3**:937-942,  
1916.

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(Experiments for the control of the dwarf disease of potatoes.)  
Okayama Agric. Expt. Sta. Ann. Rpts. **1915**:143-144, 1916;  
**1916**:183-184, 1917.

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(On the stripe disease of the rice plant.) Imp. Agric. Expt.  
Sta. Ann. Rpt. **1913**:15-41, 1917.

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Plant diseases in Ontario. Ontario Agric. Col. & Expt. Farm  
**43**:20-31, 1917.

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New disease causes alarm. Facts About Sugar **6**:426, 1918.

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Sugar cane leaf stripe disease. H.S.P.A. Proc. **39**:196-202,  
1919.

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Louisiana Planter **63**:82, 1919.

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(Phytopathological review.) Agric. Colon. (Italy) **23**(9):356-  
362, 1919.

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Report of the conference on sweet potato problems and on dis-  
eases of cotton, corn and tomatoes. Washington: Advisory  
Bd. Amer. Plant Path., Amer. Phytopath. Soc. 16 p., 1919.

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(Potato diseases.) Meded. Phytopath. Dienst (Wageningen)  
**6**:19, 1919.

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Mosaic disease as a factor influencing yield. Potato Mag. **2**  
(5):11, 27, 1919.

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The mosaic disease. Louisiana Planter **63**:253-255, 1919.

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Porto Rico fights cane mottling disease. Sugar **22**:208-210,  
1920.

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Mosaic or mottling disease. Agric. News (Barbados) **19**:245,  
1920.

Mosaic disease in potatoes. *Agric. Gaz. Canada* **7**:557-558, 1920.

The cause of the sugar cane mottled or mosaic disease. *Louisiana Planter* **65**:195-196, 1920.

Potato leaf curl. *Journ. Min. Agric. (London)* **27**:287-289, 1920.

Rajeunissement et perfectionnement de la pomme de terre. (Rejuvenescence and perfection of the potato.) *Journ. Agric. Pract.* Jan. 1, 1920.

La "filosité". *Journ. Agric. Pract.* April 1, 1920.

Florida Plant Board. Third Bienn. Rept. p. 67-71, 89-90, 1921.

Mosaic disease in Barbados. *Agric. News (Barbados)* **20**:15, 1921.

Mosaic disease—susceptible and immune varieties. *Journ. Jamaica Agric. Soc.* **25**:427-429, 1921.

Mosaic disease. Expt. & Res. Sta. Cheshunt Herst., *Ann. Rpt.* **7**:41, 1921.

Mosaic disease of sugar cane and control measures. *Louisiana Planter* **66**(12);186-187, 1921.

Yellow stripe disease investigations (Progress report). *Int. Sugar Journ.* **23**:453-454, 1921.

(Varietal susceptibility of the potato to the curly dwarf.) *Hokkaido Agric. Expt. Sta. Ann. Rpts.* **1915**:20, **1916**:20, **1917**:20, **1919**:65-66, 1921.

The mosaic disease of sugar cane in Trinidad. *Int. Sugar Journ.* **23**:74-75, 1921.

Fiji disease controlled by seed selection. *Sugar Cent. & Planters' News.* **2**(8):335-336, 1921.

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The Fiji "disease" of sugar cane. Journ. Dept. Agric. Union  
South Africa. 2: 554-556, 1921.

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Mosaic disease of sugar cane. Florida Plant Bd. Bienn. Rpt.  
1919-20, 3: 67-71, 89-96, 1921.

Notes on the Government action to prevent the spread of the dis-  
ease and data of losses.

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Mosaic disease of sugar cane. Louisiana Planter 69(25): 442-  
443, 1922.

Review of Kunkel and Lyon's work. Conclusions, given control  
measures.

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Plant diseases: Three major cane diseases. Agric. News (Bar-  
bados) 21: 62, 1922.

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Sugar cane mosaic infested areas. Florida State Plant Bd.  
Circ. 44, 2p, 1922.

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Transmission of sugar cane mosaic by aphids. West Indian  
Committee, Circ. 37: 521, 1922.

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Leaf curl and mosaic disease of potato and their relation to  
deterioration in yield. Fruit Grower & Veg. Trade Journ.  
(London) 41(19): 529-530, 1922.

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Louisiana Planter 69(25): 442-443, 1922.

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Report of the Department of Agriculture, Barbados, for the  
financial year 1921-22, p., 19. (Rev. Appl. Mycol. 2: 260-261,  
1922.)

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Mosaic disease of potatoes. Kentucky Agric. Expt. Sta. Ann.  
Rpt. 1921: 45, 1922.

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Bunchy top in bananas. Queensland Agric. Journ. 18(5): 307,  
368-369, 1922.

The author discusses a treatment with sulphur and lime.

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Mosaic disease of sugar cane. Louisiana Planter 69: 442-443,  
1922.

A popular paper with special attention to Kunkel's work in Hawaii.

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Banana bunchy top disease. Queensland Agric. Journ. **19(1)**:  
32-33, 1923.

A discussion of cause and control. Apparently written before the  
cause was known.

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Degeneration of the potato. Gard. Chron. **73**:25-26, 1923.

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Effect of selection of "seed" on the yield of the potato crop.  
(Leaf roll disease) Journ. Dept. Agric. Ireland **22**:378-380,  
1923.

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Leaf-roll and mosaic, two important diseases of the potato. Ire-  
land Dept. Agric. & Tech. Instr. Spec. Leaflet **24**, 4 p., 1923.

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Mosaic disease in potatoes. Kentucky Agric. Expt. Sta. Ann.  
Rpt. **1922**:37-38, 1923.

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Mosaic disease. Gard. Chron. **73**:345, 1923.

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New peanut disease (rosette). Journ. Dept. Agric. South Africa  
**7**:191, 1923.

A record.

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The study in degeneracy in potatoes. Nebraska Agric. Expt.  
Sta. Ann. Rpt. **1922**:10-11, 1923.

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Virus diseases in plants. Gard. Chron. **74**:168, 1923.

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Virus diseases of plants. Nature **111**:551, 1923.

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Sugar and mosaic disease of canes. Journ. Jamaica Agric. Soc.  
**27**:864-869, 1923.

A popular review of the subject.

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Treatment of mosaic in Natal. Strong views of the Govern-  
ment Entomologist. South African Sugar Journ. **7**:745-747,  
1923.

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Mosaic disease in Jamaica. West Indian Committee Circ. **38**  
(653):435-436, 1923.

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Verslag over het jaar 1922 Departement van Landbouw in Suriname. (Report of the Department of Agriculture, Suriname, for the year 1922,) p. 106, 1923.

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Press cake and mosaic. Sugar Cent. & Plant. News 4: 84, 1923. (Int. Sugar Journ. 25: 315, 1923.)

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A mosaic immune cane. Sugar Cent. & Plant. News 4: 83, 84, 1923. (Int. Sugar Journ. 25: 322, 1923.)

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Mosaic disease. Agric. Journ. India 19: 198-201, 1923.

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Louisiana Planter 70(6): 103, 1923.

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El Mundo Azucarero 10(6): 162-163, 1923. La enfermedad moteada de la caña. (The mottle disease of sugar cane.)

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Mosaic disease. Gard. Chron. 73: 345, 1923.

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On insect transmission of mosaic, especially in Java. Int. Sugar Journ. 25: 346-351, 1923.

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Virus diseases of plants. Nature 112: 293, 1923.

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The mosaic disease of sugar cane order 1923. Journ. Jamaica Agric. Soc. 28: 27, 1924.

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Jahresbericht der Preussischen Landwirtschaftlichen Versuchs und Forschungsanstalten zu Landsberg-an-Warthe Jahrgang 1923-24. (Annual Report of the Prussian Agricultural Experiment and Research Station at Landsberg-an-der-Warthe, 1923-24.) Landw. Jahb. 60: 127-260, 1924.

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Plant diseases, South Africa. Journ. Union So. Africa Dept. Agric. 8(1) 9, 1924.

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Tobacco mosaic. Mauritius Dept. Agric. Ann. Rpt. 1923: 10-11, 1924.

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Mosaic disease eradication campaign. South African Sugar Journ. 8(7): 523-524, 1924.

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The Uba cane controversy. Australian Sugar Journ. **16**: 392, 1924.

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Precautions against diseases. Australian Sugar Journ. **16**: 504-505, 1924.

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El Dr. Cross y el mosaico de la caña en Cuba. (Dr. Cross and mosaic disease of sugar cane in Cuba.) Rev. Agric. Com. & Trab. Cuba **7**(3): 10-11, 1924.  
Controversial.

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Mosaic resistant varieties of cane to be grown by Louisiana planters in Florida. Louisiana Planter **72**: 359, 1924.

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Natal Acts to stop mosaic. Facts About Sugar **19**: 450, 1924.

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Experimental Agriculture in Jamaica. Int. Sugar Journ. **26**: 274-276, 1924.

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Cane seedling work in Hawaii. Australian Sugar Journ. **16**: 163-164, 1924.

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From all sources. So. African Sugar Journ. **8**: 461, 1924.

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The Natal Planters' Union. Annual General Meeting. So. African Sugar Journ. **8**: 256-257, 259, 261, 263, 267, 1924.

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Mosaic disease in Natal. Important communications from world's experts. South African Sugar Journ. **7**(4): 269-271, 1924.

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Verslag over het jaar 1923. Dept. van Landbouw in Suriname, 114 p., 1924.

This report contains information about the sieve tubes (Phloem-necrosis) of coffee trees and probable insect carriers.

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Work in connection with insect and fungus pests and their control. Antigua Dept. Agric. Rpt. **1922-23**: 7-8, 1924. (Rev. Appl. Mycol. **4**: 59-60, 1925.)

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Mosaic cane disease in America. Australian Sugar Journ. **16**:  
420, 1924.

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Blattrollkrankheit der Kartoffel. Krög. Ratg. Obst-u. Gartenb.  
**4**, No. 3, 1924.

Bunchy top control. Queensland Agric. Journ. **21**(2): 152-153,  
1924.

Popular.

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"Bunchy top" in bananas, its Queensland history. Queensland  
Agric. Journ. **21**(3): 254, 1924

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Mosaic disease. Agric. Journ. India **19**: 198-201, 1924.

A brief discussion of papers read at the Cambridge meeting of the  
American Association for the Advancement of Science, 1922-1923.

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Mosaic disease in Natal. Proposal for eradication. So. African  
Sugar Journ. **7**: 808, 1923; **8**: 269-271, 523-524, 1924.

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Serious nature of cane diseases. So. African Sugar Journ. **8**:  
535, 1924.

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Seed potatoes and virus diseases. Gard. Chron. **74**: 85, 1925.

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A study in degeneracy in potatoes (Spindle tuber). Nebraska  
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**Ashby, S[ydney] F[ran cis]**

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Discussion of the importance of the disease, describes the symptoms and gives the results of inoculation experiments.

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Methods of studying degeneration diseases of potato. Phytopathology 14(11): 521-533, 1924.

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A study on masked carriers, of the virus diseases.

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(The stipple-streak disease of potato. A complex problem.) Bull. Soc. Bot. Bulgarie 1: 43-52, 1926.

The author gives the result of several experiments which show that plants may have virus diseases without showing symptoms. He believes that his work may explain the results obtained by Johnson by inoculating plants with juice from apparently healthy potatoes.

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Sprain or internal brown spot of potatoes. Phytopathology 16(10): 711-722, 1926.

The author gives a discussion of this disease and the results of experimental work which lead to the belief that it is caused by an unknown organism.

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Net-necrosis of the potato. Phytopathology 16(12): 929-940, 1926.

The author gives a review of the literature, a very complete description and the results of experimental work which he summarizes as follows: "Net-necrosis is a tuber symptom, not of leaf roll, but Aucuba mosaic. Spindle sprout, supposed by some to develop on those potato tubers affected with leaf roll and with net-necrosis, has no relation to leaf roll."

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Le "net necrosis" et "stipple streak" sur le pomme de terre. (Net-necrosis and stripple-streak of the potato.) Univ. Sofia Yearbook 1925-26, 4: 1-6, 1926.

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2: 51-60, 1928.

This paper gives a list of susceptible bulb plants, symptoms and other data.

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(Tobacco diseases.) Sofia Govt. Print. Off. 140 p., 1930.

Brief statement of mosaic disease.

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Plum pox: A new virus disease. Univ. Sofia Faculty of Agric.  
Yearbook 1932-33: 11, 1933.

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Bitter pit of apples: A virus disease? Yearbook of the Uni-  
versity of Sofia, Fact. Agric. 1933-34, 12: 31-67, 1934.

A very thorough account of the subject and experimental evidence in-  
dicating that the diseases is caused by a virus.

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(Is bitter pit of apples a virus disease?) Phytopath. Zeitschr.  
7(2): 145-168, 1934.

In this article the author gives evidence which tends to show that  
bitter pit of apples is a virus disease.

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Virus diseases of plants: A bibliography Houdojnk Print. Co.  
Sofia, 219 p. 1934.

A bibliography giving a list of about 3,724 titles of papers in  
which virus diseases and similar maladies receive attention.

**Atwood, G[eorge] G[rey]**

Peach yellow and little peach. New York Dept. Agric. Bull.  
61: 1719-1742, 1914.

**Auchinleck, C. G., & Crispeyn, C. P.**

Observations on the occurrence of bunchy top disease of plan-  
tains. Ceylon Dept. Agric. Yearbook 1925: 33-35, 1926.

A record of treatments given before the cause of this disease was  
determined.

**Aumiôt, J[ust]**

Experiences de rejeunissement et de perfectionnement de la  
pomme de terre. (Experiences on the rejuvenation and im-  
provement of the potato.) Rev. Gén. Bot. 33: 183-189, 244-  
263, 1921.



**Averna-Saccá, Rosario**

Algumas das moestias cryptogamicas do tabaco *Nicotiana tabacum*. (Some of the cryptogamic diseases of tobacco *Nicotiana tabacum*.) Bol. de Agric. Sao Paulo, Brasil, **23**(7-8): 201-268, 1922.

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Sobre a presença de um protozoario nos tecidos da canna de assucar atacadas pelo "mosaico". (On the presence of a protozoa in tissue of cane attacked by mosaic.) Bol. de Agric. Sao Paulo, Brasil, **27**(8-9): 183-204, 252-273, 303-319, 388-398, 1926; **28**: 173-182, 1927.)

A histological study in which the author describes a protozoan living in diseased plants. The author believes this organism to be the causal agent.

**Badami, B. S. R., & Iyengar, C. S. R.**

The bio-chemistry of the spike disease of sandal (*Santalum album* Linn.) I. Note on the influence of chlorine on starch accumulation in disease. II. The role of manganese in health and disease. Mysore Sandal Spike Invest. Committee. Bull. **2**, 12 p., 1932.

Report of studies on the composition of healthy and spike-diseased sandal (*Santalum Album* L.) leaves. A low chloride concentration co-exist with an excess of starch and a relatively increased diastatic activity in diseased leaves. In regard to manganese the authors declare that spike disease is not due to a lack of it.

**Bailey, Irving W[idmer]**

Slime bodies of *Robina pseudo-acacia*. Phytopathology **13**(7): 332-333, 1923.

Micro preparations of the phloem of tissue of *Robina pseudo-acacia* showed slime bodies described by Strasburger. They are similar to the bodies described by Nelson as associated with mosaic.

**Bailey, L[iberty] H[ylde]**

Some troubles of winter tomatoes. Cornell Univ. Agric. Expt. Sta. Bull. **43**: 149-158, 1892.

A description of winter blight of tomatoes which is now recognized as a virus disease.

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Peach yellows. Cornell Univ. Agric. Expt. Sta. Bull. **25**, 1890. Bull. **75**: 383-403, 1894.

Gives a description and a discussion.

**Baissac, Louis**

La cane a sucre est encore indemne de mosaïque á Maurice.  
(Sugar cane still unaffected by mosaic in Mauritius.) Rev.  
Agric. L'Ile Maurice (43) : 7-10, 1929.

**Bakke, A[rthur] L[awrence]**

The comparative rate of desiccation of tubers from normal and diseased potato plants. *Phytopathology* 9(12) : 541-546, 1919.

This paper is a record of physiological studies which the author summarizes as follows:

- (1) Curly-dwarf potato tubers on being desiccated reach equilibrium with evaporating power of the air before normal potatoes of the same variety.
- (2) The diseased tubers contain more suberin at the start, but later fissures are developed which cause the curly-dwarf tubers to reach their equilibrium earlier.
- (3) Curly-dwarf potatoes which are completely dried, on being placed in water show a greater absorption than desiccated normal tubers similarly placed.

**Bald, J[ames] G[rieve,] & Samuel, G[oeffrey]**

Investigations on the spotted wilt of tomatoes II. Australian Council for Sci. & Indus. Res. Bull. 54, 24 p., 1931.

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Some factors affecting the inactivation rate of the virus of tomato spotted wilt. *Ann. Appl. Biol.* 21(2) : 179-190, 1934.

The authors state that the inoculum of tomato wilt when stirred in the process of inoculation lost its virulence more rapidly than when left undisturbed and that the rate of inactivation was increased by bubbling air through it. The exclusion of free nitrogen in the bubbling air process practically does not interfere with the rate of inactivation. The authors give the results of six reducing agents tested, (sodium sulphite, sodium nitrite, ferrous sulphate, tannic acid, hydroquinone acid, cysteine hydrochloride), and discuss them.

**Ball, E[lmer] D[arwin]**

The leafhopper of the sugar-beet and their relation to the curly-leaf conditions. U.S.D.A. Br. Ent. Bull. 66 : 32-52, 1910.

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The beet leafhopper and the curly-leaf disease that it transmits. Utah Agric. Expt. Sta. Bull. 155, 56 p., 1917.

A review of the literature on the curly-leaf and the beet leaf-hopper. Gives the symptoms and distribution and expresses the opinion that the insects are the cause of the disease.

**Barber, C[harles] A[lfred]**

Report on spike disease in Coorg. *Indian For.* 29 : 21-31, 1903.

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The mosaic or mottling disease of sugar cane. The main facts of the case to date. *Int. Sugar Journ.* **23**(265):12-19, 1921.

A review of the studies on sugar cane mosaic by Johnson, Grey, Edgerton, Earle, Fawcett, Stevenson and Brandes.

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On insect transmission of mosaic, especially in Java. *Int. Sugar Journ.* **25**(295):346-351, 1923.

Review of Dr. G. Wilbrink's paper in *Meded. Proefst. Java Suikerind.* **10**, 1922.

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La situación actual en relación con el matizado en Cuba. (The present position as regards mosaic in Cuba.) *Rev. Agric. Puerto Rico* **13**(4):265-272, 1924. (*Int. Sugar Journ.* **26**(309):469-473, 1924.)

An account of the present status of the literature on the subject with a discussion on the disease.

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The influence of mosaic on yield in Louisiana. *Int. Sugar Journ.* **26**(311):581-582, 1924.

Review of Brandes's paper in *Facts About Sugar* **18**(26):610-611, 1924.

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Experimental Agriculture in Jamaica. The campaign against mosaic. *Int. Sugar Journ.* **26**(309):474-476, 1924.

Account of the position of sugar cane industry in Jamaica in regard to sugar cane mosaic disease and campaign to eradicate it.

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Streak disease of Uba cane in Natal. *Int. Sugar Journ.* **27**(321):472-479, 1925.

Review of Mr. Storey's paper on the subject in *Rpt. Proc. Imp. Bot. Congr.* p. 132-144, 1924. The author gives a review of our knowledge of this disease, including history, symptoms, range of effects (susceptibility in varieties and wild grasses), and transmission.

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The Coimbatore cane seedlings in Bihar. *Int. Sugar Journ.* **28**(326):75-77, 1926.

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The Havana Conference on cane diseases. *Inter. Sugar Journ.* **30**(359):575-582, 1928.

A record of the discussion on diseases of sugar cane. The greater part of the discussion was devoted to mosaic disease of sugar cane.

**Baribeau, [Charles Henri] B[ernard]**

La mosaïque de la pomme de terre. (The mosaic of the potato.) *Scie. Agric.* 1:181-183, 1921.

**Barker, H[enry] D., & Neal, D. C.**

Plant diseases in Mississippi during 1923. *Quart. Bull. State Plant Board Mississippi.* 3(1):13-33, 1924.

Popular notes on sugar cane, potato and sweet potato mosaic.

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Plant diseases and pests in Haiti. *Int. Rev. Sci. & Pract. Agric.* n. s. 4(1):184-187, 1926. (*Rev. Appl. Mycol.* 5(9):583, 1926.)

**Barreto, B[raulio] T.**

Algo sobre la extirpación del matizado. (Facts on mosaic eradication.) *Rev. Agric. Com. & Trab. Cuba* 7(4):12-13, 1924. (*Agricultura* 2:8-9, 1924.)

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La situación de la enfermedad "Mosaico" en la Provincia de Camagüey. (Mosaic disease situation in the Province of Camagüey.) *Agricultura* 1:150-152, 1925.)

**Barrus, M[ortimer] F[ranklin]**

Physiological diseases of potatoes. *Quebec Soc. Prot. Plants* 9th Ann. Rpt. 1916-17:45-53, 1917.

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Potato mosaic and certified seed. *Potato Mag.* 4:13-14, 1918.  
Popular.

**-----, & Chupp, Charles D[avid]**

Yellow dwarf of potatoes. *Phytopathology* 12(3):123-132, 1922. (Abstract.) 12(1):39, 1922.

A description of the disease which is new.

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Potato diseases and their control. *New York State Agric. Coll. Ext. Bull.* 135, 123 p., 1926.

A popular publication giving good descriptions.

**Barss, H[oward] P[hillips]**

International potato disease conference. *Potato Mag.* 2(2):5-6, 27-30, 1919.

Brief discussion, chiefly on leaf roll, mosaic and spindling sprout diseases.

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 Bean blight and bean mosaic. Oregon Agric. Expt. Sta. Rpt. Dept. Bot. & Plant Path., Crops Pest & Hort. Rpt. **3**:192-196, 1920.

Notes on bean mosaic. Recommendations, for the control of the disease.

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 Bean mosaic. Oregon Agric. Expt. Sta. Crop Pest & Hort. Rpt. **3**(1915-1920):195-196, 1921.

Brief notes on the occurrence of this disease in Oregon. The author states that the disease is produced (mosaic) by the presence of some organism so minute that it cannot be detected by the highest powers of the microscope. Some control measures are given.

**Barton-Wright, Eustace, & Mc Bain, Alan**

Studies in the physiology of the virus diseases of the potato: A comparison of the carbohydrate metabolism of normal with that of leaf roll potatoes. Trans. Roy. Soc. Edin. **57**(11): 309-349, 1932.

A very detailed account of the authors' experiments and observation, under control conditions, about the formation of and the nature of translocatory sugars in healthy and leaf roll potatoes. The disease was transmitted by means of *Myxus persicae* successfully in all cases.

-----  
 Recent advances in botany. Chapter 9. Virus diseases of plants. Philadelphia 1922. (Phytopathology **22**(11):929-932, 1932.)

-----, & **Mc Bain, Alan**

Possible chemical nature of tobacco mosaic virus. Nature **132** (3348):1003-1004, 1933.

In this short paper the authors report their observations while studying Johnson's No. 1 tobacco mosaic. They describe the several reactions obtained and as conclusions, they found a white crystalline compound containing no nitrogen and yet highly infectious which is considered by the writers to preclude the "living entity" theory of the tobacco mosaic virus. In its precipitation with safranin it shows affinities with the proteolytic enzymes.

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Studies in the physiology of the virus diseases of the potato. II. A comparison of the carbohydrate metabolism of normal with that of crinkle potatoes; together with some observations on carbohydrate metabolism in a "carrier" variety.

Ann. Appl. Biol. **20**(4):526-548, 1933.

Continuation of previous work. The present investigation was con-

cerned with the formation of carbohydrates in healthy and crinkle infested potato plants, and the nature of sugar or sugars in transport. A series of observations were also made to determine whether there were any differences in the carbohydrate metabolism when a latent virus (paracrinkle) was present in a variety.

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Studies in the physiology of the virus diseases of the potato.

III. A comparison of the nitrogen metabolism of normal with that of leaf-roll potatoes. *Ann. Appl. Biol.* **20**(4): 549-589, 1933.

Continuation of previous work. The present investigations is concerned with the differences between the nitrogen metabolism of healthy and leaf roll affected potato plants.

### Baudys, E[duard]

Hospodarska Fytopathologie. Dil 1. Prednasky o chorobach hospodarskych rostlin. (Agricultural phytopathology. Part 1. Lectures on diseases of agricultural plants.) Brno. Rolnicka Tiskarna (Agricultural Press) 327 p., 1929.

Second part on virus diseases.

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Fytopathologicke poznamky V. (Phytopathological notes V.) *Ochrana Rostlin* **9**(5-6): 108-128, 1929. (With German summary.)

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Phytopathologické poznamky VII. *Ochrana Rostlin* **11**(6): 178-197, 1931.

Studies on virus diseases of the following crops: soybean, plum, apricot and peach.

### Baur, E[rwin]

Zur Aetiologie der Infektiose Panachierung. (About the etiology of infectious variegation.) *Ber. Deutsch. Bot. Ges.* **22**(8): 453-460, 1904.

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Ueber die infektiöse chlorose der malvaceen. (About the infectious chlorosis of Malvaceae.) *Sitzungsb. Klg. Preuss. Akad. d. Wissensch. Bd. 1*, p. 11-29, 1906.

The infectious chlorosis of the Abutilon is latent and develops under favorable conditions. Transmitted by grafting.

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Weitere Mitteilungen über die infectiöse Chlorose der Malvaceen und über einige analogen Erscheinungen bei *Ligustrum* und *Laburnum*. (Further information on infectious chlorosis

of Malvaceae and on several similar chlorosis appearing on *Ligustrum* and *Laburnum*.) Ber. Deutsch. Bot. Ges. **24**: 416-428. 1906.

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 Über infectiose Chlorosen bei *Ligustrum*, *Laburnum*, *Fraxinus*, *Sorbus*, und *Ptelea*. (About infectious chlorosis on *Ligustrum*, *Laburnum*, *Fraxinus*, *Sorbus*, *Ptelea*.) Ber. Deutsch. Bot. Ges. **25**(7): 410-413, 1907.

The variegations on many plants is due to infectious chlorosis as proved by grafting.

-----  
 Bemerkungen zur der arbeit: H. Lindermuth, Studien über die sogenannte panaschüre und über einige begleitende erscheinungen. (Observations on the work: H. Lindermuth, Studies on the so-called variegations and some accompanying phenomena.) Land. Jahrb. Bd. **37**(5): 895-897, 1908.

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 Ueber eine infectiose Chlorose von *Euonymus japonicus*. (On an infectious chlorosis on *Euonymus japonicus*.) Ber. Deutsch. Bot. Ges. **26**(18): 711-713, 1908.

Chlorosis of *Euonymus japonicus argenteo-marginatus* is not infectious but that of *E. japonicus aureo-marginatus* is infectious.

-----  
 Das wesen und die Erblichkeits-verhältnisse der "Varietates *albo marginatae* hort. von *Pelargonium Zonale*. (On the nature and hereditary conditions of the horticultural variety *albo marginatae* of the *Pelargonium Zonale*. Zeitschr. Ind. Abst. Vererb. **1**: 330-351, 1909.

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 Zur aetiologie der infectiosen panaschierung. (On the etiology of infectious variegations.) Bot. Ges. **22**: 453-460, 1904.

### Bawden, F. C.

A study on the histological changes resulting from certain virus infections of the potato. Proc. Roy. Soc. London, ser. B. **109**: 74-85, 1932.

The author describes three types of necrosis—(1) acronecrosis, (2) acropetal necrosis and (3) leaf roll necrosis which is Quanjer's phloem necrosis.

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Infra-red photography and plant virus diseases. *Nature* **132**  
(3326): 168, 1933.

The author describes the results of his experiments and observations  
in infra-red photography of virus diseased plants.

**Bayon, H. P.**

Virus diseases of bacteria, plants and vertebrates. *Journ.*  
*Trop. Med. & Hyg.* **29**(2): 17-37, 1926.

**Beale, Helen Purdy** see Purdy, Helen Alice p. 297.

**Beaumont, A[lbert,] & Hodson, W[illiam] E[dgard] H[umphreys]**  
Sixth Annual Report of the Seale-Hayme Agricultural College,  
Newton Abbott, Devon, for the year ending September 30,  
1929.

Virus diseases of potatoes are discussed.

**Beauverie, J[ean Jules]**

La Maladie de la pomme de terre: "Enroulement et mosaïque."  
(The potato disease: Curl and mosaic.) *Rev. Gén. Sci.* **32**  
(6): 175-182, 1921.

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Quelques aspects de la dégénérescence des plantes, applications  
au parasitisme. (Some aspects of plant degeneration, ap-  
plications to parasitism.) *Rev. Gén. Bot.* **40**: 206-225, 264-  
276, 1928.

**Beauverie, Marie-Antoinette**

Les maladies a virus d'apres les travaux recents. (Recent work  
on virus diseases.) *Rev. Bot. Appl. & Agric. Colon.* **8**(80-  
81): 1-12, 334-339, (82): 404-410, 1928.

A review of work.

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Les maladies á ultravirus des plantes. (The ultraviruses dis-  
eases of plants.) *Ann. ser. Bot. & Agron. Tunisie* **9**(1-2):  
1-173, 1932.

A very comprehensive discussion of the subject subdivided into nine  
aspects. It is followed by a bibliography of 762 titles.

**Bechhold, H., & Schlesinger, M.**

Grösse von virus der mosaikkrankheit der Tabakpflanze. *Phy-*  
*topath. Zeitschr.* **6**(6): 626-631, 1933.

**Beckwith, C[harles] S[teward,] & Hutton, S[idney] B.**

Cranberry false blossom and the blunt-nosed leafhopper. *New*  
*Jersey Agric. Expt. Sta. Bull.* **491**, 16 p., 1929.



This disease has been known in New Jersey since 1915 and has become abundant since 1920. The authors give a description of the diseased plant, the life history of the insect and methods of control.

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Cranberry false blossom. New Jersey Agric. Expt. Sta. Circ. **275**, 4 p., 1933.

Popular information about cranberry false blossom in New Jersey, which is becoming a very serious disease in the State. The author formulates, as means of control, the flooding and spraying of the bogs to eliminate the insect carrier, the blunt nosed leafhopper (*Euscelis striatulus*).

**Bedson, S. P., & Bland, J. O. W.**

A simple method for determining the electrical charge carried by virus particle. Brit. Journ. Expt. Path. **10**: 67, 1929.

**Behrenz, J[ohannes]**

Weitere Beiträge zur Kenntnis der Tabakspflanze. Landwirtschaft. Versuch. **52**: 214-432, 1896. (Justs Bot. Jahresh. (Rev.) **28**: 1900. Zeitscher. f. Pflanzenkh. **10**: 192-193, 1900.)

**Beijerinck, M[artinus] W[illem]**

Ueber ein Contagium vivum fluidum als Ursache der Fleckenkrankheit der Tabaksblätter. (About the "Contagium vivum fluidum" as the cause of leaf-spot disease of tobacco leaf.) Verhandl. K. Akad. Wetensch. Amsterdam, Sect. 2, deel **6**, (5): 1-22, 1898. (Centr. Bact. II Abt. **5**: 27-33, 1899.)

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Over een contagium vivum fluidum als oorzaak van de Veeekziekte der Tabakbladen. (About the "Contagium vivum fluidum" as the cause of leaf-spot disease of tobacco.) Verlag Koninkl. Akad. van Wetensch. te Amsterdam, Wis. en Natuurk. Afd. van Zaterdag **7**(6): 229-235, 1898.

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Bemerkung zu dem Ansatz von Herr Iwanowski Tabaksplanze. Cent. f. Bkt. **25**: 310-311, 1899.

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De l'existence d' un contagieux vivant fluide agent de la Nielle des feuilles de Tabac. (About the "Contagium vivum fluidum" as the cause of leaf-spot disease of tobacco.) Archiv. Neerland des Sc. Extractes et Nat. ser. **3**: 164-186, 1899.

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Über ein Kontagium vivum fluidum als Ursache Fleckenkrankheit der Tabaks-blätter. (About the "Contagium vivum fluidum" as the cause of leaf-spot disease of tobacco.) *Centr. Bakt. Abt. II*, 27-33, 1899.

**Beke, L[adislaus] von**

Beiträge einer Blattrollkrankheit der Kartoffelpflanze. (Contribution to leaf roll disease of the potato.) *Jahresb. Ver. Angew. Bot.* 10:145-155, 1912.

**Bell, A[rthur] F[rank]**

Cane diseases in Louisiana and West Indies. *Australian Sugar Journ.* 18(10): 601-607, 1927. (*Louisiana Planter (Abstract)* 78(8): 147-148, 1927.)

-----  
Report of the sugar pathologist. Queensland Bur. Sugar Expt. Sta. *Ann. Rpt.* 28: 10-13, 1928.

A brief note on inspection for Fiji and mosaic of sugar cane.

-----  
The distribution of sugar cane mosaic. *Ref. Book Sugar Industry of the World* 7: 31-32, 1929.

Report of the results of the observations made by the author during 1924-1928, while visiting the most important sugar cane producing centers. Concludes by inserting a list of the seven major diseases of sugar cane with their geographical distribution.

-----  
Work of the Division of Pathology. Queensland Br. Sugar Expt. Sta. *Ann. Rpt.* 30: 36-41, 1930.

The author states that Fiji disease is prevalent in the Bunderberg area. Gives some Coimbatore canes as susceptible to mosaic.

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The Fiji disease menace in Southern Queensland. *Queensland Agric. Journ.* 38(5): 417-420, 1932.

A brief history, description of symptoms and method for control.

-----  
Dwarf disease of sugar-cane. Queensland Br. Sugar Expt. Sta. *Div. Path. Bull.* 3: 3-12, 1932. (*Farmers' Bull.* 8, 8 p., 1933.)

A very complete description of this new virus disease.

**Benecke, F.**

Proefhemingen ter bestrijding der "sereh". Semarang. 27 p., 1890.

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Is het mogetijk uit typische "sereh" stekkengezond suikerriet te telen? Meded. Proefstat Midden-Java te Semarang 10 p. 1890.

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De bestrijding der onder der naam "sereh" saamgevatte ziekteverschijnselen van het Suikerriet. Semarang 16 p. 6 Sept. 1891.

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"Sereh". Onderzoekingen en beschouwingen over oorzaken en middelen. Meded. Proefstat. Midden-Java 6: 61-94, 1893.

**Bennett, C[arlyle] W[ilson]**

Disease control in black raspberries. Michigan Agric. Expt. Sta. Quart. Bull. 6: 12-14, 1923.

Popular.

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Peach yellows and little peach situation in Michigan. Michigan State Hort. Soc. Ann. Rpt. 56: 187-196, 1926.

Popular.

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Virus diseases of raspberries. Michigan Agric. Expt. Sta. Tech. Bull. 80, 38 p., 1927.

The author discusses the history, economic importance and gives symptoms of the diseases. Also the results of extensive experimental work on dissemination which is by *Amphorophora rubi* and *Aphis rubiphila*.

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Some raspberry mosaic symptoms. Phytopathology (Abstract) 19(1): 89, 1929.

-----  
Further observations and experiments on the curl disease of raspberries. Phytopathology 20(10): 787-802, 1930.

From experiments the author concludes that there are two viruses (Alpha and beta) responsible, according to variety, for curl disease of raspberries.

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Further observations and experiments with mosaic disease of raspberries, blackberries and dewberries. Michigan Agric. Expt. Sta. Bot. Sect. Tech. Bull. 125, 1932.

Description of the general types of bramble mosaic. Consideration about insect vectors and their behaviour.

**Berg. A. J. J.**

Over den invloed eener warmwaterbenbandeling op de kieming van reetstekken. Arch. Suikrind. Nederl. Indië. **34**(3): 82-89, 1926.

**Bergman, H. F., & Truran, W. E.**

An apparent case of transmission of cranberry false blossom through a natural graft. Phytopathology **23**(8): 670-672, 1933.

The author describes a case of apparent transmission of cranberry false blossom through a natural graft which up to this date was practicable only with the aid of the leafhopper *Ophiola striatula*.

**Berkeley, G[arven] H[ugh]**

Report of the Dominion Field Laboratory of Plant Pathology, St. Catherine, Ontario. Dept. Agric. Expt. Farms, Div. Ann. Rpt. **1923**: 16-20, 1923.

A report on the virus diseases of raspberries.

-----, & **Jackson, A[ngus] B.**

Raspberry diseases. Phytopathology (Abstract) **14**: 347, 1924.

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Studies in raspberry diseases, mosaic, leafcurl, rosette and wilt. Canada Dept. Agric. Pamphlet n.s. **72**, 15 p., 1926.

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Report of the Dominion Field Laboratory of Plant Pathology, St. Catherine, Ontario. Dept. Agric. Expt. Farms, Div. Bot. Ann. Rpt. **1926**: 59-102, 124-130, 1927.

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Tomato diseases. Canada Dept. Agric. Div. Bot. Bull. **15**, 1927.

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Studies on tomato streak. Sci. Agric. (Canada) **7**(6): 210-223, 1927.

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Strawberry mosaic. Canada Dom. Bot. Rpt. **1927**: 128-130, 1928.

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Streak disease of the tomato. Ontario Dept. Agric. Ann. Rpt. Veg. Growers' Assoc. **25**: 52-59, 1930.

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Diseases of the raspberry. Canada Dept. Agric. Pamphlet n.s. **120**, 23 p., 1930.

A popular discussion (Rev. of Pamphlet N.S. No. 72) summarizing recent information regarding mosaic, leaf curl, rosette or bramble streak in Canada.

-----  
Tomato streak: transmission of the disease by seed. Canada Rpt. Dom. Botanist, St. Catherine, Ontario, Ann. Rpt. 1930: 128, 1931.

-----  
Suspected strawberry mosaic. Canada Dept. Agric. Div. Bot. Rpt. Dom. Botanist 1930: 125-126, 1931.

This disease has the appearance of being due to virus but there is no absolute proof.

-----, & Madden, G. O.

Transmission of streak and mosaic diseases of tomato through seed. Sci. Agric. (Canada) 13(3): 194-197, 1932; 13(7): 455-457, 1933.

The authors give evidence that these diseases can be transmitted through the seeds. They also demonstrated that the viruses of both diseases existed in the seeds.

Bersch, W[ilhelm J. K.]

(The leaf-roll disease of the potato in moor lands.) Zeitsch. Moorkultur u. Torfverwert., 8(2): 90-96, 1910.

Besaude, Matilde

Flagellates in plants. A review of foreign literature. Phytopathology 15(5): 273-281, 1925.

This paper does not discuss virus disease, but is of interest because of the protozoan theory of virus diseases.

-----  
A degenerescencia das batatas. (The degeneration of potato.) Actualidades Biol. 4: 61 p., 1931.

This is a discussion of the properties of the viruses, cell inclusion, types of virus diseases, classification, losses, resistance and susceptibility and influence of environment.

Betancourt, P. E.

El mosaico en Cuba. (The mosaic in Cuba.) Rev. Agric. Com. & Trab. Cuba 7: 23-25, 1925.

Bewley, W[illiam] F[leming]

Minute organisms isolated from the virus of mosaic disease of tomato. Nature 112(2825): 903, 1923.

A preliminary paper giving the results of attempts to grow a virus in culture. Brittle bodies, resembling bacteria were found on the glass above the liquid.

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Mosaic disease of tomato. Cheshut Expt. & Res. Station Ann. Rpt. 8:42, 1923.

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Mosaic disease of cucumber. Expt. & Res. Sta. Cheshut Herts. 1925 Ann. Rpt. 11:86-89, 1926.

-----, & Corbett, W[ilfred]  
Mosaic disease of tomato. Expt. & Res. Sta. Cheshut Herts. Ann. Rpt. 13:51-59, 1928.

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Plant viruses. Nature 126(3178):471, 1930.

-----, & Bolas, Bernard, J.  
Aucuba or yellow mosaic of the tomato plant: Reaction of infected juice. Nature 125(3143):130-131, 1930. (Rev. Appl. Mycol. 9(7):417, 1930.)

The results of experiments which indicate a destruction of chlorophyl.

-----, & Corbett, W[ilfred]  
The control of cucumber and tomato mosaic disease in greenhouses by the use of clean seed. Ann. Appl. Biol. 17(2):260-266, 1930.

Mosaic disease of cucumber and tomato is decidedly transmissible. Roguing of diseased plants is a way to clean seed. The use of clean seed reduced the infection.

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The nature of the virus principle in mosaic disease. Nature 127(3203):442, 1931.

Details of observations made by the author is given.

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The nature of the virus principle in mosaic disease. Expt. & Res. Sta. Cheshut Herts. 17:45-46, 1932.

The author prepared juices from mosaic and healthy plants which were infected with culture of bacterial organism isolated from diseased stems. The infected juice became almost clear in 24 hours, which suggested bacteriophage type. No change occurred when aucuba mild mosaic and striped disease were used.

### **Bijl, P. A. van der**

Agriculture in the winter rainfall area. The work of an important institution. (Ex Annual Rpt. Sec. of Agri. Year ending June 30, 1931). Farming in South Africa, 6:354-358, 1931.

Reports a virus disease on *Raphanus raphanistrum*, *Calendula officinalis*, *Tithonia diversifolia* and *Passiflora* sp.

**Bijlert, A[ibertus] van**

Opmerking, omtrent de verbreiding van een viekziekte, Meded. Slands Plantutuun. **43**: 49-52, 1899.

Observations about the spread of the diseases on the field.

**Binkley, A[Imond] M.**

Transmission studies with the new psyllid-yellows disease of Solanaceous plants. Science n.s. **70**(1825): 615, 1929. (Rev. Appl. Mycol. **9**(5): 332, 1930.)

Transmission of the disease by means of *Paratriozoa cockerelli* indicates that this disease is caused by a virus.

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Transmission studies with the new psyllid-yellows disease of Solanaceous plants (a preliminary report). Proc. Amer. Hort. Sci. **1929**: 248-254, 1930.

The 1928 tomato variety work at the Agricultural Experiment Station was a complete failure because of this disease which is carried by *Paratriozoa cockerelli*. This insect also transmits the disease to *Cap-sicum annuum*, *Solanum Pseudocapsicum* and eggplant.

**Biourge, [le Chanoine] P[h.]**

La vraie cause de la dégénérescence de la pomme de terre non pas Virus filtrant mais microbe (*Bac. ruber* N. et L.) (The true cause of the degeneracy of the potato is not a filterable virus but a microbe (*Bac. ruber* N. et L.) Agric., Louvain, 7 p., 1930.

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**, & Sokal, N.**

Nouvelles recherches sur les maladies de la pomme de terre dites á virus filtrants. (New investigation on the diseases of potatoes due to filterable viruses.) Agricultura **32**(2): 77-114, 1932.

**Birkeland, J[orgen] M.**

Electrophoretic studies on purified plant viruses. Phytopathology (Abstract) **23**(1): 4-5, 1933.

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Experiments in acquired immunity in tobacco mosaic and spot necrosis. Phytopathology (Abstract) **23**(1): 5, 1933.

-----  
Serological studies of plant viruses. *Bot. Gaz.*, **95**(3):419-436, 1934.

The author states:

1. That in addition to the antigenic constituents of healthy plants an antigenic element was found accompanying and inseparable of the virus itself. Antibodies accompanying one virus is specific to it.
2. That viruses may be freed from the antigenic constituents of healthy plants, but not from the specific antigenic factors accompanying.
3. That close association of the antigenic factor with infectivity and the specific nature of the antigenic fractions the different viruses strongly suggest that this specific antigenic factor is either the virus itself or a virus-plant-protection complex in which the virus plays the role of haptene. Precipitating test should prove to be a valuable aid in the further classification of plant viruses.

**Birmingham, W. A.**

Conditions resembling American peach rosette. *Agric. Gaz. N. S. Wales* **31**:581-582, 1920.

Description and suggestions for control.

**Bisby, G[uy] R[ichard], & Olaas, G.**

Potato diseases in Minnesota. *Minnesota Agric. Expt. Stat. Bull.* **190**, 44 p., 1920.

Includes brief popular notes on several virus diseases of the potato.

**Blackman, V[ernon] H[erbert]**

Discussion on some similarities and dissimilarities between plant and animal diseases, with special reference to immunity and virus diseases. *Brit. Med. Journ.* **1922**(3225):718-722, 1922.

**Blake, Maurice A[din]**

Peach yellow and little peach. *New Jersey Agric. Expt. Sta. Bull.* **226**, 26 p., 1910.

Extensive discussion of the symptoms of these two diseases and also a discussion of winter injury.

-----, & **Connors, C[harles] H[enry]**

Peach yellow and little peach at Vineland. *New Jersey Agric. Expt. Sta. Rpt.* **1916**:72-74, 1917.

-----, **Cook, Melville T[hurston], & Schwarze, C[arl] A[lois]**

Studies on peach yellow and little peach. *Phytopathology (Abstract)* **7**(1):76-77, 1917.



-----, & -----, & **Connors, C[harles] H[enry]**  
 Recent studies on peach yellows and little peach. New Jersey  
 Agric. Expt. Sta. Bull. **356**, 62 p., 1921. (Phytopathology  
 (Abstract) **11**:140-142, 1921.)

Records of very thorough field studies of these diseases.

-----  
 Prominent enemies of the peach. Amer. Fruit Growers **43**(2):  
 8, 21, 31-33, 1923.

**Blakeslee, A[lbert] F[rancis], & Avery, B. T.**

Mutations in the Jimson weeds. Journ. Heredity **10**:111-120,  
 1919.

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 A graft-infectious disease of *Datura* resembling a vegetative  
 mutation. Journ. of Genetics **11**(1):17-36, 1921.

-----  
 An apparent case of non-Mendelian inheritance in *Datura* due  
 to a disease. Proc. Nat. Acad. Sci. **7**:116-118, 1921.

**Blanchard, E[mile] & Perret, Claude**

La enrroulement de pomme de terre. (Leaf roll of potato.)  
 Compt. Ren. Acad. Agric. France **3**(31):894-895, 1917.

-----, & -----  
 La maladie de l'enroulement des pommes de terre. (Leaf-roll  
 disease of potatoes.) France Ann. Serv. Epiphy. **6**:320-326,  
 1918.

-----, & -----  
 Recherches relatives a la maladie de l'enroulement de la pomme  
 de terre affectuées dans le departement de la Loire. (Ex-  
 periments on leaf roll disease of potatoes in the Department  
 of Loire.) France Ann. Serv. Epiphy. **5**:242-252, 1918.

The authors reported in the article the susceptibility of different  
 varieties and stated the date of appearance of the disease in 1918  
 Informed also that the use of stable manure and nitrate of soda  
 reduced the losses due to the disease. The causal agent is not found  
 in the soil, nor in the surface of the tuber.

-----, & -----  
 Sur l'enroulement des feuilles de la pomme de terre. (Leaf  
 roll of potatoes.) Compt. Rend. Acad. Agric. France **5**(10):  
 356-358, 1919.

After several years of experiments the authors believe that nitrogen  
 hunger is the chief symptom of the disease. Is considered a degen-  
 erative disease due to intensive asexual propagation. Good fertilizing  
 may improve the growth.

-----, & -----

La maladie de l'enroulement de la pomme de terre (Leaf roll disease of potato.) France Ann. Serv. Epiphy. 7:294-303, 1921.

The authors disagree with Quanjer and others. They believe the disease to be physiological.

**Blaringhem, L[ouis Florimond]**

Mosaïque hereditaire chez le pois *Pisum sativum*. (Hereditary mosaic in peas *Pisum sativus*.) Compt. Rend. Acad. Sci. (Paris) 175(26):1432-1434, 1922.

**Blattny, C[tibor Eugen Marie Karel]**

Studie o mosaikovych chorobach rostlin kulturnich, hlavne Bramboru. (Studies of diseases of cultivated plants, chiefly of the potato, related to mosaic.) Zemedelisky Archir. 15(9-10):459-482, 1924. (With French summary 16(1-2):8.)

Account of mosaic of *Clerodendron fragrans*.

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(Uncommon diseases and pests of potatoes in 1925.) Ochrana Rostlin 5:74-76, 1925.

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(Preliminary report of the irradiation of potatoes affected with leaf roll with B and radium rays.) Ochrana Rostlin, Prag 6(3):48-53, 1926.

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(Virus diseases of raspberries and blackberries.) Ochrana Rostlin, Prag. 7(3-4):62-70, 1927.

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(International experiments in Holland and Czecho-Slovakia on the degeneration of potato seed in different regions due to virus diseases.) Zemedesky Archiv., Prag 19:327-330, 423-438, 1928.

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O methodáck studies virusovych chorob u chmele. (Methods of studying the transmission of Hop virus diseases.) Ochrana Rostlin 8(2-3):51-56, 1928.

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(The mosaic of the lily of the valley (*Convallaria majalis* L.)) Ochrana Rostlin Prag 9(1):19-21, 1929.

-----  
 Poznamky o virovych a pribuznych choroback rostlin I. (Notes on virus and similar diseases of plants I.) Ochrana Rostlin 10(4-5):130-138, 1930. (With German summary.)

Several virus diseases are briefly discussed.

-----  
 Studio o kaderavosti Chmele. (Studies on the "Kaderavost" disease of Hop.) Recueil de Trav. des Inst. des Recherches Agron. de la Rep. Tchechoslovaque Prag. 46, 44 p, 1930. (With German and French summaries.)

An extensive discussion about "Kaderavost" disease of hop being in Czecho-Slovakia for 45 years. It is regarded as a virus disease.

-----  
 Pokus S pasazi vira brambose. (Experiment on the passage of potato virus.) Ochrana Rostlin 10(3):65-70, 1930.

The virus can be transmitted from the tuber of a potato so resistant that it does not show symptoms to a susceptible variety that does show symptoms.

-----  
 Virové choroby. (Virus diseases.) Ochrana Rostlin 11(3-4):138, 1931.

A report on the condition for the year.

-----  
 Lze Zjistiti pritomost vira pusobiciho nekteré choroby Bramboru v jéjich prenasesi, msicich? (Can the viruses that cause certain potato diseases be detected in their aphid vectors?) Vestn. Kral. Ces. Spol. Nank. 7 p., 1931.

Only one difference between vectors from diseased and healthy plants was observed. In the majority of the former the aureola around the cell nucleus was dark, in the latter it was clear.

-----, & Vukulov, V.

Mosaic bei *Epiphyllum truncatum*. (Mosaic on *Epiphyllum truncatum*.) Gartenbauwissenschaft 6:425-432, 1932. (Zeitschr. Pflanzenkrank. (Abstract.) 43(2):88-59, 1933.)

Description of a virus disease on the cactus *Epiphyllum truncatum*.

**Blodgett, F[orest] M[ilo,] & Fernow, Karl [Hermann]**

Testing seed potatoes for mosaic and leaf-roll. Phytopathology (Abstract) 11(1):58-59, 1921.

-----  
 The relation of time and temperature to the killing of potatoes and potato mosaic virus. Phytopathology (Abstract) 12(1):40-41, 1922.

-----, **Fernow, Karl [Hermann,] & Perry, F[rank] R[ichard]**  
Testing seed potatoes for mosaic and leaf-roll. *Phytopathology*  
(Abstract) **12(1)**: 40-41, 1922.

-----  
Time-temperature curves for killing potato tubers by heat  
treatments. *Phytopathology* **13(11)**: 465-475, 1923.

The experiments reported in this work were conducted with particular  
reference to mosaic and leaf-roll diseases.

-----  
Hot water and hot air treatments of potatoes. *Phytopathology*  
(Abstract) **13(1)**: 55, 1923.

-----  
Tobacco mosaic on potatoes. *Phytopathology* **17(10)**: 727-735,  
1927.

The author gives the results of cross inoculation experiments. The  
results agree with those obtained by Johnson and Fernow.

-----  
A potato virus on peppers. *Phytopathology* **17(11)**: 775-782,  
1927.

The author gives the results of inoculating peppers with potato virus.  
The resulting disease appears to be the same as mosaic virus from  
potatoes used by Fernow on *Nicandra Physalodes* and *Nicotiana gluti-  
nosa*.

**Blood, H[erbert] L[oran]**

A "streak" of tomatoes produced by a disturbing principle  
from apparently healthy potatoes in combination with tomato  
mosaic virus. *Phytopathology* **18(3)**: 311-312, 1928.

-----, **Richards, B[ert] L[orin], & Wann, F[rank] B[urkett]**  
Studies of psyllid yellows of tomatoes. *Phytopathology* (Ab-  
stract) **23(11)**: 930, 1933.

**Boas, Friedrich**

Die züchterische Bekämpfung der Blattrollkrankheit der Kar-  
toffel. (Control through breeding of the leaf-roll disease of  
potatoes. *Illustr. Landw. Zeitg.* **37**: 341-342, 1917. (*Zeitschr.*  
*Pflanzenkrank.* **29**: 54, 1919.)

The author makes distinctions between hereditary and non hereditary  
leaf-roll. The latter is due to *Fusarium*.

-----  
Beiträge zur Kenntnis des Kartoffelabbaues. (Contribution to  
the knowledge of deterioration in potatoes.) *Ztschr. Pflan-  
zenkrank.* **29(5-6)**: 171-176, 1919.

The author states that very insignificant difference in hydrogen-ion

concentration may have marked effect on metabolism. He found in his experiments that without exception the cell sap of sound plants showed appreciably more acidity than diseased plants in regard to catalase, his experiments gave obvious differences.

**Bohm, F.**

Die züchterische Bekämpfung der Blattroll krankheit. (The breeding against leaf roll disease.) Ill. Landw. Zeitung. No. 52, 1917.

**Bohme, R. W.**

Einige Fälle spontaner Infektion mit echtem tabak—Ring flecken—Virus. (Some cases of spontaneous infection with the true tobacco ring spot virus.) Phytopath. Zeitschr. 6(5) : 507-515, 1933.

Report of observations of development of a virus apparently identical to ring spot on tobacco. Information in regard to mechanical transmission, no insect transmission of this disease has apparently been recorded.

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Vergleichende Untersuchungen mit Stämmen des "X" und "Y" virus. (Comparative studies on strains of the "X" and "Y" viruses.) Phytopath. Zeitschr. 6(5) : 517-534, 1933.

In his experimental work the author differentiated four "X" viruses on potatoes and three distinct forms of the "Y" virus on the basis of their effects on various hosts of which *Nicotiana sylvestris* and *Solanum aculeatissimum* showed the most characteristic symptoms. Other very valuable data is included as to transmission experiments.

**Bohutinsky, G[ustav]**

Beiträge zur Erforschung der Blattrollkrankheit. (Contribution to the investigations on leaf-roll disease.) Monastchefte fur Land-Wirtschaft. Jahrg. 2(4) : 118-130, 1909. (Zeitschr. fur das Land-Wirtschaft. Versuchswesen in Oesterreich, Jahrg. 13(7) : 607-633, 1910.)

**Bolas, Bemard D., & Bewley, W[illiam] F[leming]**

Aucuba or yellow mosaic of the tomato. II note on the metabolism. Nature 126(3178) : 471, 1931.

The authors suggest that the virus acts on the starch to form (1) nitrogen and protein, (2) attacks the chlorophyll and causes a mottling and (3) reacts on the respiration of the plant.

-----  
Physiological investigations of mosaic disease in the garden tomato. Expt. & Res. Sta. Cheshut Herts. **16**: 62-67, 1930.

A study of the influence of temperature and light. The period of incubation varies with the mottle type by temperature and light. The most pronounced mosaic was with blue-green light.

-----  
Physiological investigations of mosaic disease. Expt. & Res. Sta. Cheshut Herts. **17**: 47, 1932.

The virus in the living tissue can be destroyed by the passage of a direct electric current of 5.0 microamps. per sq. cm. of tissue.

### **Bonazzi, Augusto**

Study on sugar cane mosaic. Science n.s. **64**(1665): 529-530, 1926. (Rev. Appl. Mycol. **6**(3): 184-185, 1927.)

The author describes a method of inoculating sugar cane by drilling a hole into healthy cane and inserting a plug of corresponding size cut from a mosaic cane.

### **Boncquet, P[ierre] A[uguste] & Hartung, W[illiam] J[ohn]**

The comparative effect upon sugar beet of *Eutettix tenella* Baker from wild plants and from curly top beets. Phytopathology **5**(6): 348-349, 1915.

This is a brief note giving the results of experiments. Insects from curly top beets carried the disease to healthy beets. Insects from wild uninfected plants did not produce the disease until after having fed on diseased beets.

-----  
Presence of nitrates and ammonia in diseased plants. Its significance with regard to crop rotation and soil depletion. Journ. Amer. Chem. Soc. **38**(11): 2572-2576, 1916.

-----  
Wild vegetation as a source of curly-top infection of sugar beet. Journ. Econ. Ent. **10**(4): 392-397, 1917.

-----  
*Bacillus morulans* n. sp. A bacterial organism found associated with curly top of the sugar beet. Phytopathology **7**: 269-289, 1917.

No proof that this organism is the cause of the disease. This paper gives the results of extensive studies on an organism found in sugar beets.

-----  
Discovery of curly leaf of sugar beet in the Argentine Republic. Phytopathology **13**(10): 458-460, 1923.

Also reported the finding of *Entettix tenella*.

**Bonde, R.**

The spread of spindle tuber by the knife. Amer. Pot. Journ. 4: 51-52, 1927.

Popular.

**Böning, K[arl]**

Die Mosaikkrankheit der Rübe. (Mosaic disease of beet.) Forschungen usw. Heft 3: 81-128, 1926. (Ztschr. Pflanzenkrank. Bd. 37: 19-15, 1927.)

-----  
 Über die Wechselseitige Uebertragbarkeit der Mosaikkrankheiten von Rübe und Spinat. (Reciprocal transmission of beet and spinach mosaic.) Centr. Bakt. II Abt. 71: 490-497, 1927.

Spinach mosaic was transferred to beets by *Aphis fabae* and *Macrosiphum* sp. Spinach mosaic was transferred to spinach by inoculation but beet mosaic could not be transferred in this manner.

-----  
 Die Kalifornische Blattrollkrankheit der Rübe. (California leaf-roll disease of sugar beet.) Centr. Bkt. II Abt. 72(15-24): 379-398, 1927.

A review of the literature on curly top and mosaic of the sugar beet.

-----  
 Die Mosaikkrankheit der Ackerbohne (*Vicia faba* L.) (The mosaic disease of broad beans (*Vicia faba* L.) Forsch. Gebtet. Pflanzen. Kr. 4: 43-111, 1927.

-----, & Schaffnit, [Johannes Martin] E[rnst Christian Otto]  
 Die Mosaikkrankheit der Rübe. (The mosaic disease of beet.) Zeitschr. des Vereins der Dent. Zuck-Indust. Bd. 77, 1927. (Technisches Teil. Heft 844: 13-72, 1927. Forsch. Geb. Pflanzenkrank. 3: 8-128, 1927. Zeitschr. Pflanzenk., 37(1-2): 19-35, 1927.)

-----  
 Panaschierung und Mosaikkrankheit. (Variegation and mosaic disease.) Gebt. Pflanzen. u. d. Immu. in Pflanzenrich Heft. 4: 16-22, 1927.

-----  
 Über den gegenwärtigen Stand einiger die Erforschung der Viruskrankheiten betreffenden Fragen. Prakt. Blätt Pflanzenb. u Schutz. 5: 33-42, 1927.

-----  
 Die Mosaikkrankheit des Tabaks. An die: Bericht über des Auftreten von Krankheiten und Schädlingen am Tabak im Jahre 1927. (The mosaic disease of tobacco. In his Report on the diseases and pests occurring during the year 1927.) Arb. aus der Bayer. Lands. Pflanzenb. Pflanzen sch. Heft 4: 36-40, 1928.

Account of the occurrence of the disease, discussion and comparative data of other workers on the subject.

-----  
 Ist die durch die Blattwanze (*Piesma quadrata* Fieb.) hervorgerufene Erkrankung des Rübe eine Viruskrankheit? Anzeigq. Schädlingskunde 4: 8-10, 1928.

-----  
 Beobachtungen aus der Praxis über die wechselnde Aüsprägung der Merkmale der Mosaikkrankheit der Kartoffel im Verlaufe der vegetationszeit. (Field observations on the variations of the symptoms of potato mosaic disease during the growing season.) Blätter Pflanzenb. n. Pflanzenschutz 5(12): 308-315, 1928.

A study of the masking of symptoms with reference to its bearing on inspection.

-----  
 Beiträge zum Studium der Infektionsvorgänge pflanzenzlicher Viruskrankheit. I. Mitteilung. (Contribution to the study of the infection processes of the virus diseases of plants. Part I.) Zeitschr. fur Prasitenkunde 1(1): 198-230, 1928. (Rev. Appl. Mycol. 7: 659-660, 1928.)

The author discusses the rate of spread of the virus and the results of double inoculations.

-----  
 Insecten als Ueberträger von Pflanzenkrankheiten. (Insects as carriers of plant diseases.) Zeitschr. Angew. Ent. 15(1): 1929.

-----  
 Krankheiten, Schädliche und Witterungsschaden am Tabak im Jahre 1929. Prakt. Blatt. Pflanzend. u. Schuts. 8: 27-33, 1930.

-----  
 Deformationskrankheit an Rübe und Spinat. (Deformation disease on beet and spinach.) Zeitschr. Pflanzenk., Pflanzenschutz u Pflanzenschutz. 40(7): 315-323, 1930.



A description of a leaf deforming diseases of beets and spinach, *Rumex obtusifolius* and *R. crispus*. It is transmitted by *Aphis rumicis* and *Myzus persicae*.

Zur Aetiologie der streifen-und Krauselkrankheit des Tabaks. (On the etiology of the stripe and curl disease of tobacco.) Zeitschr. fur Parasitenkunde 3(2):103-141, 1931.

Description of the disease with full account of these studies. Believes that these diseases are carried in the soil. No evidence of seed transmission. Inoculated both diseases into *Nicotiana tabacum* *N. macrophylla* and *N. rustica*.

### Booberg, K. G.

De bergbibitaanplant op Java. (The cultivation of mountain sets in Java.) Arch. voor Java Suikerindustrie. Deel II 40(37):761-767, 1932.

The sereh disease is of no importance owing to the use of resistant varieties. The hill nurseries are decreasing.

### Borg, P[aul]

Appendix F. Report of the Plant Pathologist. Reports on the working of (Multa) Govt. Depts. during the financial year 1927-28, p. T15-T16, 1929. (Rev. Appl. Mycol. 9(3):158, 1930.)

### Borisevich, G. F.

(The mosaic of the leaves of the sugar beet.) In V. P. Muraviov. Mozaichnye Bolezni Sakharnoi Svekly (Mosaic diseases of sugar beet.) Kiev, SS. U. Soiuzsakhara p. 141-160, 1930. (English Abstract p. 158-160.)

Sugar-beet leaf mosaic is very common in Ukraina ranging from 15 to 100 per cent on mother beets and from 0.5 to 100 per cent on first year beets. The author also discusses carriers, wild hosts, sugar content, deterioration and insect control.

### Bouriquet, A. G.

La rosette de l'arachide á Madagascar. (Peanut rosette disease in Madagascar.) Agron. Colon. 20(160):105-108, 1931.

A disease which appears to be the same as the one reported from Africa.

Les maladies du Manioc á Madagascar. (Cassava disease in Madagascar.) Rev. Path. Veg. & Ent. Agric. 19(8-9-10):290-297, 1932.

Brief morphological and economic account of the chief diseases in Madagascar, among which mosaic disease of cassava is discussed, giving control methods.

**Bouygues, H[enri]**

Sur la Nielle des feuilles du Tabac. (La "Nielle" of tobacco leaf.) *Compt. Rend.* **137**: 1303-1305, 1903.

-----, & **Perreau**

Contributions a l'étude de la nielle des feuilles de Tabac. (Contribution to the study of "La Nielle" of the tobacco leaves.) *Compt. Rend.* **139**: 309, 1904.

**Bovell, J[ohn] R[edman]**

Sugar cane mosaic. Barbados Dept. Agric. Ann. Rpt. **1921-1922**: 19, 1922.

**Boycott, A. G.**

The transmission from life to death: The nature of filterable viruses. *Smithson. Inst. Ann. Rpt.* **1929**: 323-343, 1929. *Proc. Roy. Soc. Med. Path. Sect.* **22**(1): 55-69, 1929. *Nature* **123**: 91-98, 1929.) (*Proc. Roy. Soc. Med. London* **22**(1): 55-69, 1929.)

**Bradford, F. C., & Joley, Lloyd**

Infectious variegation in the apple. *Journ. Agric. Res.* **46**(10): 901-908, 1933.

The authors refer to a paper reporting infectious variegation of apple published in France before 1835. They report the occasional occurrence of the disease in United States. Description of the behaviour of the disease.

**Brandenbourg, E[rnst]**

Die Mosaikkrankheit (Gelbfleckigkeit) des Spinats und ihre Übertragung durch Insecten. (The mosaic disease (Yellow spot disease) of spinach and its transmission by insects.) *Zeitschr. Pflanzenkrank u. Schutz.* **37**(5-6): 173-182, 1927.

-----  
Ueber Mosaikkrankheiten an Compositen. (Mosaic disease of Compositae.) *Forsch. Gebiet Pflanzenkr.* **5**: 39-72, 1929.

A discussion of a mosaic of *Lactuca sativa* var *capitata* and *Dahlia variabilis* and of mottling of some other members of this family.

**Brandes, E[lmer] W[alker]**

The mosaic disease of sugar cane and other grasses. U.S.D.A. Bull. **829**, 26 p., 1919. (Minist. Agric. Indus. Com. ser. Inf. Rio de Janeiro 33 p., 1926.)

Gives a history of the disease, distribution and losses in the United States, symptoms, varietal susceptibility, other hosts, nature of the disease methods of transmission and methods of control.

-----  
 Artificial and insect transmission of sugar-cane mosaic. Journ. Agric. Res. **19**(3) : 131-138, 1920.

Gives the results of series of experiments demonstrating that sugar cane mosaic is transmitted by *Aphis maidis*.

-----  
 Mosaic disease of corn. Journ. Agric. Res. **19**(10) : 517-522, 1920.

Gives the symptoms and distribution of the disease. Also experiments showing that *Aphis maidis* is a carrier.

-----  
 Mechanics of inoculation with sugar-cane mosaic by insect vectors. Journ. Agric. Res. **23**(4) : 279-283, 1923.

Gives a review of the literature and describes the mechanics of inoculations.

-----, & Klaphaak, Peter J[ohn]

Cultivated and wild hosts of sugar cane or grass mosaic. Journ. Agric. Res. **24**(3) : 247-262, 1923. (Rev. Appl. Mycol. **2** : 584-585, 1923. Rev. Appl. Ent. ser. A **11** : 449, 1923.)

Gives the result of testing 40 species of grasses to determine their susceptibility to mosaic. Makes statement that thirteen species of grasses are susceptible to the virus of sugar-cane mosaic. Give the results of inoculation experiments.

-----, -----  
 Growth stimulation and pest and disease control by hot-water treatment of sugar-cane seed. Louisiana Planter **71**(19) : 371-372, (20)392-394, (21)412, 1923. (Rev. Appl. Mycol. **3** : 301-302, 1924.)

Hot water treatment had no effect on sugar-cane mosaic.

-----, & -----  
 Breeding of diseases resistant sugar plants for America. Ref. Book Sugar Indus. of the World, July 1923.

-----  
 Mosaic's role in limiting Louisiana yields. (El rol de la enfermedad del mosaico en limitar los rendimientos de Luisiana.) Rev. Indus. Agric. de Tucumán **15**(1-2) : 29-33, 1924. (Facts About Sugar **18**(26) : 610-611, 1924, Int. Sugar Journ. **26** (311) : 581-582, 1924.)

Mosaic is one of the many factors causing low yields. This is a popular paper containing much valuable data.

-----  
 Kavangerie sugar cane in Puerto Rico. Facts About Sugar **21** (18) : 422-424, 1926.

-----  
Potash not a Panacea. Facts About Sugar 25(19) : 472, 1930.

Controversial. Reply to Mr. Otto Hasch in regard to the use of potash to cure sugar cane mosaic disease.

-----  
Breeding for resistance to mosaic. Facts About Sugar 26(11) : 490-493, 1931.

Reports that *Saccharum robustum* from Papua appears to be free from mosaic. The disease was found in Papua on several varieties of *S. officinarum* and on *Coix lachryma-jobi*. The author also reports it on a number of hybrid varieties.

**Breda de Haan, J[acob] von**

Eene nieuwe suikerriet ziekte in W. Indie. (A new sugar cane disease in the West Indies.) Teysmania 4 : 544-548, 1893.

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De gele strepenziekte bij suikerriet. (Yellow stripe disease on sugar cane.) Teysmania 4 : 511-522, 1893.

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Vooloopige mededeeling over het Peh Sem der Mosaïekziekte bij de Deli-Tabak. Teysmania p. 567-584, 1899.

**Breemen, P[ieter] J[ohan] von**

Eenige Waarnemingen Omtrent het zwermen van *Aphis maidis* Fitch. (Some observations concerning the imigrations of *Aphis maidis* Fitch.) Arch. Meded. Java Suikerind. 18 : 513-543, 1926. (Facts About Sugar 21(39) : 919, 1926.)

Gives the results of trapping the insect which indicates that they have definite periods for migration. The sudden outbreaks of the disease are correlated with the periods. Agrees with J. Alfaro from Cuba.

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Strepenziekte en bladluizen. (Stripe disease and leaf lice.) Arch. Java Suikerind. 1926 : 910-912, 1926.

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*Aphis maidis* op suikerriet bij Pasoervean. (*Aphis maidis* on sugar cane at Pasoervean.) Arch. Java Suikerindus. 35(3) : 557-577, 1927.

This paper reports a continuation of the author's studies on the swarming of *Aphis maidis*. The author recommends the roguing of the field in advance of the swarming so as to remove the centers of infection.

Verdere waarnemingen omtrent het zwermen van *Aphis maidis* Fitch. (Further observations on the migrations of *Aphis maidis* Fitch.) Arch. Meded. Java **35**: 583-588, 1927.

Proven over strepenziekte met Klaboos in het vije veld. (Yield despite stripe disease in five fields at Klaboos.) Arch. Java Suikerindus. **13**: 579-582, 1927.

**Brehmer, G[ustav] von**

Die anatomische und mikrochemischen veränderungen der Kartoffelleptoms. (The anatomical and microchemical changes in the leptome of the potato.) Rept. Inter. Conf. Phytopath. & Econ. Ent. Holland **1923**: 79-85, 1923.

The author discusses necrosis, obliteration, and necrobiosis. Necrobiosis is an old age character of both normal and diseased plants. Necrosis is a character of leafroll plants. Obliteration is a character of plants that are dying after maturity.

Der Einfluss der Kalidüngung auf die Blattrollkrankheit der Kartoffell. (The influence of potash fertilization on the leaf roll disease of potato.) Ernährung d. Pflanze **20**: 12, 1924.

Een cytologisch onderzoek van Strepenziekte bij Zuikerriet en andere planten. (A cytological study of stripe disease of sugar cane and other plants.) Meded. Proefst. Java Suikerindus. **11**: 337-371, 1926. (Rev. Appl. Mycol. **5**(12): 765-766, 1926.)

The author reports the finding of intracellular bodies in mosaic disease of sugar cane and gives a general discussion of the subject.

**, & Barner, J.**

Über die Viruskrankheiten der Kartoffel. (On the virus diseases of the potato.) Biol. Reichst. f. Land-und Forst. **18**(1): 1-56, 1930.

Biologische Bekämpfungsmethoder der Viruskrankheiten. (Biological methods to combat virus diseases.) Forstschritte der Medizin **49**(8). 1931.

Über die Viruskrankheiten verschiedner Kulturpflanze. (On virus diseases of different cultivated plants.) Second Int. Congr. Comp. Path. (Paris) p. 365, 1931.

-----  
 Vergleichende Pathologie und Biologische Bekämpfungsmethoden der Viruskrankheiten im allgemeinen. (Comparative biological and pathological methods to combat virus diseases in general.) Second Int. Congr. Comp. Path. (Paris) **2**: 358-362, 1931.

-----, & **Rochlin, Emilia**

Histologische und mikrochemische Untersuchungen über pathologische Gewebeeränderungen viruskranker Kartoffelstan- den. (Histological and microchemical investigations on the pathological changes of the tissues of virus-diseased potato plants.) *Phytopath. Zeitschr.* **3**(5): 471-498, 1931.

The authors give evidence that nutritional disturbances give symp- toms similar to those resulting from virus diseases.

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 Les maladies à virus de diverses plantes cultivées. (Virus dis- eases of different cultivated plants.) Deuxième Congr. Inter. Path. Comp. (Paris) **1**: 355, 1931.

**Brewer, P[earl] H[arvey,] Kendrick, J[ames] B[lair,] & Gardner; Max W[illiam]**

Effect of mosaic on carbohydrate and nitrogen content of the tomato plant. *Phytopathology* **16**(11): 843-851, 1926.

Chemical studies which show that soil conditions did not materially affect the two diseases. In most cases there was a reduction of total weight and in all cases a reduction of carbohydrates as a result of mosaic. No reduction in nitrogen content.

-----, **Kraybill, H[arry] R[eist,] & -----**

Purification of the virus of tomato mosaic. *Phytopathology* **17** (10): 744, 1927.

A description of two methods which the authors believe to be an improvement over past methods.

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Purification and certain properties of the tomato mosaic virus. *Phytopathology (Abstract)* **19**(1): 108, 1929.

-----, **Samson, R[ayburn] W[alter,] & Gardner; Max W[illiam]**

Purification and certain properties of the virus of typical tomato mosaic. *Phytopathology* **20**(12): 943-950, 1930.

This paper is a continuation of previous work, effect of different filters, temperature and pH concentration on the virus is discussed.

**Brick**

Neues über die Blattrollkrankheit der Kartoffel. (News about the leaf-roll disease of the potato.) Krög. Ratgeb. Obst- u. Gartenb. 4, No. 4, 1924.

**Brierley, Philip**

Studies on mosaic and related diseases of dahlias. Contr. Boyce Thompson Inst. 5(2): 235-288, 1933.

Extensive and careful experimental work performed in partial fulfillment of the requirements for the degree of Doctor of Philosophy in the Graduate School of Cornell University.

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Virus diseases of Dahlia. Phytopathology (Abstract) 23(1): 6, 1933.

Different types of the disease are discussed as well as its insect vector (*Myzus persicae*) and other ways of transmission.

-----  
Dahlia mosaic and its relation to stunt. Bull. Amer. Dahlia Soc. 9(65): 6-11, 19, 1933.

Cross-inoculation on virus diseases of dahlia, which the author states is not synonymous with "stunt". Notes on the transmissibility and control of the disease.

-----, & Mc Whorter, Frank P.

A mosaic disease of bulbous iris. Phytopathology (Abstract) 24(1): 4, 1934.

**Brierley, W[illiam] B[roadhurst]**

On a case of recovery from mosaic disease of tomato. Ann. Appl. Biol. 2(4): 263-266, 1916.

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Economic importance of virus diseases of plants. Brit. Soc. Adv. Sci. Rpt. (Abstract) 91: 493, 1923.

**Brittlebank, C[harles] C.**

Tomato diseases. Victoria Dept. Agric. Journ. 17: 231-235, 498-500, 1919; 18: 413-416, 1920.

A description of the spotted wilt of tomato.

**Britton-Jones, H. R.**

Stripe disease of corn (*Zea mays* L.) in Trinidad. Trop. Agric. (Trinidad) 10(5): 119-122, 1933.

The author observed since 1929 a stripe disease of corn which occurred in Trinidad and closely resembling that described by Stahl in Cuba. That disease was associated with the leafhopper *Peregrinus maidis* as vector, both in Cuba and Tanganyika. The author describes

the disease and his observations on inoculation studies. A similar disease resembling the one under discussion was observed also on sorghum.

**Brock, J. A.**

Cause of mosaic disease discovered by science. *Facts About Sugar* 16(1) : 14-15, 1923.

Review of Nelson, Kunkel and Mc Kinney's work, on bodies associated with mosaic disease.

**Brooks, A[rchibald] J[oseph]**

Causes of mosaic discovered by science. *Facts About Sugar* 16: 14-15, 1923.

Popular reference to works by Nelson, Kunkel and McKinney.

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Report on the Agricultural Department, St. Lucia. Imp. Dept. Agric. West Indies Rpt. Agric. Dept. St. Lucia 1918-1919, 32 p., 1920.

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Rosette disease investigations. Gambia Dept. Agric. Ann. Rpt. 1927-28 : 11-16, 1928.

Annual Report of the Department of Agriculture, Colony of the Gambia, for 1928-29, p. 54, 1929. (Rev. Appl. Mycol. 9(1) : 20, 1930.)

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Annual Report of the Department of Agriculture, Colony of Gambia, for the year ending March 31st, 1932, 18 p., 1932.

The rosette of the peanuts is not carried in the seed. Many other plants, such as *Petunia*, *Vinca*, *Calliopsis*, *Calendula*, *Chrysophyllum* *Cainito* and *Lagerstroemia*, show symptoms. The vectors is *Aphis labruri* (*A. Leguminosae*). The author also reports a chlorosis which can be transmitted.

**Brooks, C[harles], & Fisher, D. F.**

Jonathan spot, bitter pit and stigmonose. *Phytopathology* 4 (6) : 402-403, 1914.

Description of these diseases, in that date the true cause of bitter pit was not known.

-----, & -----  
Irrigation and bitter pit. *Phytopathology* (Abstract) 6(1) : 111, 1916.

**Brooks, F[rederick] T[om]**

Virus diseases of plants. *Nature* 112(2826) : 955, 1923.

This paper is a review and discussion of papers by Murphy, Quanjer, Whitehead and Salaman.



**Brown, B[enjamin] A[rthur]**

The causes of degeneration of Irish potato in Connecticut. Connecticut (Storrs) Agric. Expt. Sta. Bull. **160**: 325-380, 1929.

The author gives the results of field studies over the period from 1922 to 1928 which shows conclusively that mosaic, leaf roll, spindle tuber and similar diseases are the chief causes of potato degeneracy in Connecticut.

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Degeneration of potatoes in Connecticut. Amer. Potato Journ. **7**(5): 140-142, 1930.

A popular discussion of the subject.

**Brown, N[icholas] E[dward]**

*Abutilon Thompsonii* and other species. Gard. Chron. **48**: 427. 1910.

**Brown, W[illiam], & Blackman, V[ernon] H[erbert]**

Field experiments on the deterioration of the Scotch potato seed in England. Ann. Appl. Biol. **17**(1): 1-27, 1930.

Data is given of the results obtained in the experiments. The main fact is that virus disease affects to a great extent the potato seed and the early lifting or shading has no marked effect of a purely physiological nature.

**Bruner, S[tephen] C[ole]**

Notas sobre la enfermedad del mosaico de la caña de azúcar. (Notes on sugar-cane mosaic disease.) Rev. Agric. Com. & Trab. Cuba **2**(9): 532-533, 1919.

The disease is infectious in character. Healthy plantings became infected from nearby diseased plantings.

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La enfermedad del mosaico o de rayas amarillas de la caña de azúcar en Cuba. (The mosaic or yellow stripe disease of sugar cane in Cuba.) Rev. Agric. Com. & Trab. Cuba **2**(9): 437-441, 1919.

Record of the occurrence of the disease and a review.

-----  
Algunas observaciones sobre la enfermedad del "mosaico" o "rayas amarillas" de la caña de azúcar. (Some observations on the "mosaic" or "yellow stripe" disease of sugar cane.) Rev. Agric. Com. & Trab. Cuba **4**(6): 616-620, 1921.

A review of work on resistant varieties in Puerto Rico, Hawaii and Jamaica. Gives a list of susceptible and resistant varieties.

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Exploración biológica y fitopatológica en la Provincia de Pinar del Río. (Biological and fitopathological exploration in the Province of Pinar del Río.) Rev. Agric. Com. & Trab. Cuba 5(4) : 27, 1922.

Records the occurrence of mosaic disease on sugar cane in Taco Taco in the Province of Pinar del Río, Cuba.

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Sobre la trasmisión de la enfermedad del mosaico o rayas amarillas en la caña de azúcar. (On the transmission of mosaic or yellow stripe disease of sugar cane.) Rev. Agric. Com. & Trab. 5(1) : 11-22, 1922.

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Bibliografía. La enfermedad de las "rayas amarillas" en la caña. (Bibliography. The sugar-cane "yellow stripe" disease.) Rev. Agric. Com. & Trab. Cuba 5(2) : 32-33, 1922.

A review of a paper by Simonetto.

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El mosaico y otras enfermedades y plagas de la caña en Cuba. (Mosaic and other cane diseases and pests in Cuba.) Mundo Azucarero 2(1) : 20-27, 1923. (Louisiana Planter 70(22) : 452-455, 1923. Rev. Appl. Mycol. 2 : 523-524, 1923.)

The mosaic does not appear to spread as rapidly in Cuba as in Puerto Rico. Recommends the use of resistant and immune varieties.

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La enfermedad del mosaico de la caña de azúcar. (Mosaic disease of sugar cane.) Cuba Est. Expt. Agron. Circ. 60, 16 p., 1923. (Facts About Sugar 18(14) : 329, 1924.)

A discussion of conditions in Cuba.

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La enfermedad del mosaico de la caña de azúcar. (Mosaic disease of sugar cane.) Argentina, Ind. Azucarera 29(366) : 228-237, 1924.

-----  
Sobre el daño que ocasiona el "mosaico" a la caña de azúcar. (On the damage caused by "mosaic" to sugar cane.) Cuba Est. Expt. Agron. Circ. 61 : 3-14, 1925.

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La situación respecto al "mosaico" de la caña de azúcar en Jamaica. (The situation in regard to sugar-cane mosaic in Jamaica.) Rev. Agric. Com. & Trab., Cuba 8(1) : 74-76, 1926. (Agricultura (Santiago de las Vegas) 1(1) : 160-162, 1925.)

**Brunnich, J. C.**

Report of the Agricultural Chemist. Queensland Dept. Agric & Stock, Ann. Rpt. 1923: 28-31, 1924.

Notes on bunchy top disease of bananas.

**Bryant, M. W.**

Report on the conference on the phony peach disease held at Memphis, Tennessee, on December 13, 1932. Trans. Illinois Hort. Soc. 66: 217-226, 1933.

Objections to quarantine pointed out. It was argued that the disease is controllable by eradication and destruction of infested trees and that it is not transmissible by propagation.

**Bryce, G.**

The "bunchy top" plantain disease. Dept. Agr. Ceylon, Leaflet 18, 2 p., 1923.

Popular.

**Buchwald, N. F.**

Omm virussy gdomme hos planterne. (On the virus diseases of plants.) Naturens Verdens 1933, p. 447-470, 1933.

Brief historical sketch of researches on virus diseases of plants and discussion of the various aspects of the problem now undergoing investigations. Review of the most recent work.

**Bunzel, H[erbert] H[orace]**

A biochemical study of the curly-top of sugar beet. U.S.D.A. Br. Plant Indus. Bull. 277, 27 p., 1913.

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(The role of oxidases in curly-top of sugar beets.) Biochem. Ztschr. 50(3-4): 185-208, 1913.

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Oxidases in healthy and in curly dwarf potatoes. Journ. Agric. Res. 2(5): 373-404, 1914.

Chemical and physiological studies with special reference to the oxidase activity of the plants.

-----  
Oxidase reaction in healthy and blighted spinach. Journ. Agric. Res. 15(7): 377-380, 1918.

Report of the results obtained in his studies on the subject. He states that the results obtained resembles those obtained in several other plant diseases. In the case of the mosaic of tobacco, leaf-curl of potatoes, curly-top of sugar beets and curly dwarf of potatoes the diseased material shows a greater power to transfer atmospheric oxygen to certain aromatic compounds than the healthy plants.

**Burger, O[wen] F[rancis]**

Report of the Plant Pathologist. Florida Agric. Expt. Sta.  
Ann. Rpt. 1920-21: 25 R-28 R, 1921.

Brief notes on mosaic disease of several economic plants.

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Report of the Plant Pathologist. Florida Agric. Expt. Sta.  
Ann. Rpt. 1922-23: 52 R-102 R, 1923.

Notes on mosaic disease of several economic plants. Some of them are records. Sweet potato mosaic is discussed to some extent.

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Report of the Plant Pathologist. Florida Agric. Expt. Sta.  
Rpt. 1924-25, 1925.

First record of eggplant mosaic disease.

**Burkholder, W[alter] H[agemeyer]**

Bean diseases in New York State in 1916. Phytopathology (Abstract) 7(1): 61, 1917.

-----, **Hawley, I[ra] M[yron,] & Lindstrom, E[rnest]**  
**W[alter]**

Some results of the New York State bean investigations. Proc. New York Fruit Growers' Ass'n. 17th Ann. Meeting 17: 120-125, 1918.

-----, **& Muller, A[lbert] S[tanley]**

Hereditary abnormalities resembling certain infectious diseases in beans. Phytopathology 16(10): 731-737, 1926.

This paper includes a discussion of a disease which resembles mosaic. It is designated as a "pseudo mosaic."

**Burnett, G[rover,] & Jones, Leon K[ilby]**

In contrast with seedling stock, apparently healthy potato tubers are virus carriers. Phytopathology (Abstract) 20(10): 854-855, 1930.

-----, **& -----**  
The effect of certain potato and tobacco viruses on tomato plants. Washington Agric. Expt. Sta. Bull. 259, 37 p., 1931.

This paper gives the results of very interesting experiments. It is especially valuable for the data on latent viruses.

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The distribution of the latent virus in tubers of commercial potatoes. Phytopathology (Abstract) 21(1): 104, 1931.

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The longevity of the latent and veinbanding viruses of potato in dried plant tissue. *Phytopathology* **24**(3): 215-227, 1934. (Washington Agric. Expt. Sta. Sci. Paper **257**.)

Trials of inoculation of dried inoculum on tobacco and tomato plant, giving the results.

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Stunt-A virosis of Delphinium. *Phytopathology* **24**(5): 467-481, 1934.

The author describes the disease of Delphinium known as "stunt" or witches broom. The disease has been transmitted mechanically to several species of plants, but the insect vector has not yet been determined.

**Busch, Hans J., & Wolf, Frederik A.**

Manufactured tobacco, a source of inoculum for mosaic in flue-cured tobacco. *Phytopathology* **23**(10): 839-841, 1933.

Brief report of the results of investigations of manufactured tobacco as source of inoculum for mosaic in flue-cured tobacco.

**Busch, W.**

Die mosaikkrankheit der Zukerrübe. (The mosaic disease of sugar beet.) *Osteurop. Landw. Zeitg* **4**, No. 6, 1927.

**Butler, E[dwin] J[ohn]**

Report on "spike" disease among sandalwood trees. *Indian For. App. Ser.* **29**(1): 1-11, 1903.

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Some characteristics of the virus diseases of plants. *British Med. Journ.* **1922**: 963-964, 1922. (*Sci. Prog.* **17**(67): 416-431, 1923.)

Classifies the virus diseases into four groups. Gives a general discussion of the problems.

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Virus diseases of plants. *Proc. Pan Pacific Sci. Congr.* **1**: 143-149, 1923.

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Report of some diseases of the tea and tobacco in Nyasaland. *Nyasaland Dept. Agric. Ann. Rpt.* **1928**: 30, 1929.

**Butler, O[rmond Rourke]**

Effect of size of seed used in commercial planting on the incidence of leaf-roll and mosaic in potatoes. *Journ. Amer. Soc. Agron.* **22**(1): 75-77, 1930.

A brief record of some experimental work.

-----, & Murray, H. L.

Effect of nitrate of potash on the vigor and productivity of healthy and leaf roll. Green mountain potato plants and their progenies. Journ. Amer. Soc. Agron. 24(11):881-887, 1932.

Report of results of experiments. In conclusion it was noticed that nitrate of potash applied to some of the cultures not only increased yields but also resulted in loss of vigor in the progeny of the fertilized plants.

**Button, H[arry] F[reeman]**

Scoundrel in stripes. Gard. Mag. 34:108, 116, 1921.

**Caesar, L[awson]**

Peach diseases. Peach yellows and little peach. Ontario Dept. Agric. Bull. 201:43-59, 1912.

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Some little known but destructive diseases reported. Ontario Agric. Coll. & Expt. Farm. Ann. Rpt. 38:28, 1912.

A record of raspberry yellows and tomato mosaic.

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Some data on peach yellows and little peach in Ontario. Phytopathology (Abstract) 10(5):318, 1920.

**Caldwell, John**

The physiology of virus diseases in plants. I. The movement of mosaic in the tomato plant. Ann. Appl. Biol. 17(3):429-443, 1930.

The movement in the plant of the causative agent of virus disease is discussed. The relevant data in the literature is summarized.

This paper gives the results of experiments which demonstrated that the virus is not carried in the xylem.

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The physiology of virus diseases in plants. II. Further studies on the movement of mosaic in the tomato plant. Ann. Appl. Biol. 18(3):279-298, 1931.

Experiments with aucuba mosaic in tomato are discussed. These results support the general thesis that the causative agent does not normally travel in the xylem stream.

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Studies in the physiology of virus diseases in plants. III. Aucuba or yellow mosaic of tomato in *Nicotiana glutinosa* and other hosts. Ann. Appl. Biol. 19(2):144-152, 1932.

When the aucuba or yellow mosaic of tomato is injected into *Nicotiana glutinosa* and *Datura stramonium* the symptoms are different from those produced by this little multiplication of the virus.

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The physiology of virus diseases in plants. IV. The nature of tomato. *Ann. Appl. Biol.* **20**: (1)100-116, 1933.

The author summarizes this paper as follows: "In this paper the symptoms of aucuba mosaic of tomato in *N. glutinosa* are described. A method is discussed whereby it is possible to count the spots formed after inoculation with juice diluted to different strengths. The fact that the number of spots formed is proportional to the amount of dilution is taken as indication the number of virus particles present in the juice. It is shown that the amount of virus present in the juice does not increased after agitation or after treatment with proteolytic enzymes. With trypsin and diastase they were decreased. This decrease it is suggested, is due to the absorption rather than to the destruction of the virus. The amount of multiplication of the virus in the tissues of *N. glutinosa*, is examined and compared with the much greater multiplication in tomato tissues.

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The physiology of the virus diseases in plants. V. The movement of the virus agent in tobacco and tomato. *Ann. Appl. Biol.* **21**(2) : 191-205, 1934.

The author reports the results of experiments on the movement of **the virus of aucuba** or yellow mosaic of the tomato. Also of experiments on the transmission of six different viruses in the seed of tomato or tobacco, which were negative. The author suggests that the chances of seed transmission of these viruses are very slight. Other observations are given and concludes that the virus apparently moves in the direction opposite to that of the metabolites.

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The physiology of virus diseases in plants. VI. Some effects of mosaic on the metabolism of the tomato. *Ann. Appl. Biol.* **21**(2) : 206-224, 1934.

The author revises the literature dealing with the effect of virus diseases on the metabolism of the host plants. He reports the results of his experiments and observations on the aucuba or yellow mosaic in tomato. According to the author the metabolism of the plant is not affected during the stage of development. He found that the respiration process is somewhat affected by the disease, the output of CO<sub>2</sub> by the host tissues is higher than the healthy ones. This is attributed to an increase in the efficiency of the enzyme system of the diseased plants.

#### Calinissa, M. R.

The occurrence of bunchy-top and root-knot in Abacá. *Phil. Jour. of Agric.* **2**(2) : 121-127, 1931.

Plants of *Musa textilis* may be infected with both diseases which causes some confusion.

Attempts to re-establish abacá plantation in Cavite, previously wiped out by bunchy top. *Philippine Journ. Agric.* **2**(3): 209-221, 1931.

The efforts have not been encouraging. Ten introduced varieties are more or less susceptible. The use of fertilizer was not successful.

**Caluwe, P. de**

(The leaf curl of potatoes.) *Handel. Vlaamsch Natuur en Geneesk Cong.* **12**(2): 195-200, 1922.

**Calvino, Mario**

Informe de los años 1918, 1919 y 1920 de la Estación Experimental Agronómica, Santiago de las Vegas, Cuba. (Annual Report for the years 1918, 1919 and 1920 of the Agricultural Experiment Station, Cuba), pp. 547-550, 1920.

Doce puntos relacionados con el mosaico de la caña y el modo de combatirlo. (Twelve points related to sugar cane mosaic disease and methods to control it.) *Rev. Agric. Com. & Trab. Cuba*, **5**(12): 6-7, 1924.

Nuevas orientaciones en la selección de caña para semilla. (New orientations in sugar cane seed selection.) *Rev. Agric. Com. & Trab. Cuba*, **5**(12): 8-10, 1924.

**Campbell, D. Curl**

Communications to the Board of Agriculture. **3**: 219, 1802.

**Campbell, E[lmer] G[rant]**

Potato leaf-roll as affecting the carbohydrate, water and nitrogen content of the host. *Phytopathology* **15**(7): 427-430, 1925.

A brief paper giving the results of studies indicated in the title.

**Camuñas, Manuel**

Report of the Commissioner of Agriculture and Labor, 19th Ann. Rpt. Govt. Porto Rico to Secretary of War, Washington, D. C., Appendix **LX** pp. 685-707, 1919. (*Rev. Appl. Ent. ser. A.* **9**: 332, 1919.)

A record of the occurrence of mosaic of sugar cane in Puerto Rico.

**Carne, W[alter] M[illard]**

Spotted wilt of tomatoes. W. Australia Dept. Agric. Leaflet **116**, 1923.

Popular.



Lithiasis and bitter pit of pears. Journ. Dept. Agric. W. Australia 2 Ser. 4(2) : 202-206, 1927.

Description of these two diseases before the cause was known.

Mosaic and leaf roll of potatoes. Journ. Dept. Agr. W. Australia 2 Ser. 4(2) : 322-329, 1927.

Bitter pit in apples: Some recent investigations. Journ. Australian Council Sci. & Indus. Res. 1(6) : 358-365, 1928.

Report of recent observations. This work was done before the cause was known.

A preliminary note on a theory as to the origin of bitter pit in apples. Journ. Dept. Agric. W. Australia 2 Ser. 4(3) : 382-385, 1927.

The author attributes the bitter pit of apples to excessive transpiration. He explains his conclusions, written before the cause was known.

....., **Pittman, H. A., & Elliot, H. G.**

Studies concerning the so-called bitter pit of apples in Australia, with special reference to the variety Cleopatra. Australian Council Sci. & Indus. Res. Bull. 41, 88 p., 1929.

This is a preliminary report. It reviews the literature, describes the disease, and gives control measures. This paper was written before the true cause of the disease was known.

**Carpenter, C[larence] W[illard]**

The Río Grande lettuce disease. Phytopathology 6: 303-305, 1916.

The first record of this disease.

**Carrante, Vincenzo**

La produzione della patate da semente e le malattie da virus. (Potato production by seed and the virus disease.) L'Italia Agricola 11(4) : 439-463, 1933.

A well illustrated popular paper giving good description.

**Carroll, E.**

On the disease in potatoes called curl. Irish Farmers' & Gard. Mag. 4 : 248-251, 1837.

Historical.

**Carrière, E. A.**

Revue Horticole 52 : 444, 1880.

Mention of *Pittosporum tobira variegata*.

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 Influence du greffon sur le sujet. (Influence of the graft upon the stock.) Rev. Hort. 59: 58-59, 1887.

Mention of *Pittosporum tobira variegata*, *Ilex*, *Rhamnus*, *Acer pseudoplatanus* var. *cuchlora*.

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 Resistance in sugar beet to curly-top. Phytopathology (Abstract) 16(1): 87-88, 1926.

### Carsner, Eubanks

Susceptibility of various plants to curly top of sugar beet. Phytopathology 9(9): 413-421, 1919.

The author gives a list of susceptible plants obtained by experimental studies.

-----, & Stahl, C[owins] F[loyd]  
 The relation of *Chenopodium murale* to curly-top of the sugar beet. Phytopathology (Abstract) 14(1): 57, 1924.

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 Progress report on curly-top of sugar beet. Phytopathology (Abstract) 14(2): 122-123, 1924.

-----, & -----  
 Studies on curly-top disease of the sugar beet. Journ. Agric. Res. 28(4): 297-319, 1924. (Facts About Sugar, March 1925.)

Gives review of the literature, the distribution of the disease and the leafhopper. Discusses the importance of the disease, the incubation period in the insect, the relation of the number of insects to the disease, the effects of light and temperature, susceptibility, other hosts overwintering and methods of control.

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 Spring infection of sugar beet leafhopper with curly-top virus. U. S. D. A. Official Rec. No. 34, 3 p. 1925.

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 A bean disease caused by the virus of sugar beet curly-top. Phytopathology (Abstract) 15(11): 731, 1925.

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 Attenuation of the virus of sugar beet curly-top. Phytopathology 15(12): 745-756, 1925.

*Chenopodium murale*, *Rumex crispus* and *Suaeda moquini* are difficult to infect. The attenuation of the virus from these plants does not give immunity to beets.

-----  
 Resistance in sugar beet to curly top. U. S. D. A. Circ. 388, 7 p., 1926.

Based on the evidence reported the author hopes to find a resistant variety of beet to curly top.

Susceptibility of the bean to the virus of sugar-beet curly-top. Journ. Agric. Res. **33**(4) : 345-348, 1926.

Brief account on the susceptibility of bean to the virus of sugar-beet curly-top, transmitted by the leafhopper *Eutettix tenella* Baker. Description of symptoms and enumeration of susceptible varieties of beans.

----- & Lackey, C[harles] F[ranklin]

Further study on attenuation of the virus of sugar beet curly-top. Phytopathology (Abstract) **18**(11) : 951, 1928.

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Mass action in relation to infection, with special reference to curly-top of sugar beet. Phytopathology (Abstract) **19**(12) : 1137, 1929.

-----, Abegg, F. A., Cormany, C. E., Elcock, H. A., Keller, W., Lowe, C. C., Owen, F. V., Park, D. A., Price, C., & Skuderna, A. W.

Curly-top resistance in sugar beets and tests of the resistant variety U. S. No. 1. U. S. D. A., Tech. Bul. **360**, 68 p., 1933.

Gives the results of experimental work with this important variety.

**Carter, Walter**

Population of *Eutettix tenellus* Baker and the osmotic concentration of its hosts plants. Ecology **8** : 350-352, 1927.

The author does not discuss virus diseases, but this insect is of interest in connection with curly-top of sugar beet.

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Extensions of the known range of *Eutettix tenellus* Baker and curly-top of sugar beets. Journ. Econ. Ent. **20** : 714-717, 1927.

A record of an outbreak of curly-top of sugar beet in Montana and an abundance of the insect vectors.

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Ecological studies of curly-top of sugar beets. Phytopathology (Abstract) **17**(10) : 747, 1927.

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A technic for use with homopterous vectors of plant diseases with special reference to sugar-beet leafhopper, *Eutettix tenellus*. Journ. Agric. Res. **34**(5)449-452, 1927.

A description of a device for artificial feeding of the insects.

-----  
An improvement in the technique for feeding homopterous insects. *Phytopath.* **18**(2): 246-247, 1928.

A very short paper in which the author describes the method.

-----  
Transmission of the virus of curly-top of sugar beet through different solutions. *Phytopathology* **18**(8): 675-679, 1928.

The author gives the results of experiments with leafhoppers as transmitting agents.

-----  
The purpose of predicting outbreaks of *Eutettix tenellus* Baker under present-day conditions. *Journ. Econ. Ent.* **22**(1): 154-158, 1929.

A study which is of value in connection with the study of the curly-top of sugar beets.

-----  
Seasonal and regional variations in curly-top of sugar beets. *Science* **63**(1625): 213-214, 1926.

Observations indicate "That the abundance or scarcity of beet leafhoppers and presumably also the climatic conditions of a given area rather than the severe outbreaks occurred simultaneously throughout the range of the insects at periodic intervals."

-----  
Susceptibility of the virus of sugar beet curly-top. *Journ. Agric. Res.* **33**(14): 345-348, 1926.

The author gives proof that a disease of the beans is caused by the same virus as that causing the curly-top of the sugar beet and that it is carried by the insect (*Eutettix tenella*.)

-----  
Curly-top problems from the pathological standpoint. *Utah Agric. Expt. Sta. Misc. Publ. No. 3*, 1927.

-----  
Ecological studies of curly-top of sugar beet. *Phytopathology* **19**(5): 467-477, 1929.

"The development of curly top appears to be more severe under conditions of high light intensity, temperature, and evaporation than under conditions where these factors are reduced in intensity. One experiment indicates that the conditions governing susceptibility to infection are not the same as those conditioning the later development of the disease. Experiments on the control on external environment indicate that lampblack and zinc oxide when sprayed onto the leaves, interfered with the normal functions of the plant and did not favor the development of the disease. Hydrated lime reduced the severity of the disease but did not affect the normal beet."

-----  
Ecological studies of the beet leaf-hopper. U. S. Tech. Bull. **206**: 114 p., 1930.

This paper does not deal with any virus disease but is of interest because the insect is a carrier of the curly-top of the sugar beet.

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Some phases of the sugar-beet leaf-hopper problem. Journ. Washington Acad. Sci. **20**: 153-155, 1930.

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Comparison of tobacco dust with other forms of nicotine in control of yellow spots of pineapples. Journ. Econ. Ent. **25**(5): 1031-1035, 1932.

Tobacco dust was superior to other nicotine preparations in the control of the vector (*Thrips tabaci*).

-----  
The pineapple mealybug (*Pseudococcus brevipes* (Ckl.) and wilt of pineapples. Phytopathology (Abstract) **22**(12): 996-997, 1932.

-----  
The spotting of pineapple leaves caused by *Pseudococcus brevipes* (Ckl.) the pineapple mealybug. Phytopathology (Abstract) **22**(12): 996, 1932.

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The pineapple mealybug, *Pseudococcus brevipes* and wilt of pineapples. Phytopathology **23**(3) 207-242, 1933.

The author gives excellent description of this disease and the results of experimental work by which he demonstrated that the disease is carried by this insect. There is no positive proof that this disease is due to a virus.

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The spotting of pineapple leaves caused by *Pseudococcus brevipes* the pineapple mealy bug. Phytopathology **23**(3): 243-259, 1933.

This insect causes two types of spots and it is not known that either of them is due to a virus. The power to cause green spots is transmitted from mother to young but not all the young ones have the power to transmit the disease.

#### Casagrandi, O.

Virus filtrabili ed ultrafiltrabili (Tecnica e ricerche personali). (Filterable and ultrafilterable viruses. Personal technique and researches). Bull. Atti. A. Acad. Med. Rome. **52**(9): 285-288; (10): 340-344, 1926.

**Cation, Donald.**

Three virus diseases of the peach in Michigan. *Michigan Agric. Expt. Sta. Circ. Bull.* **146**: 2 p., 1932.

A brief historical review of yellow and little peach and a description of a new virus disease to which he gives the name "red suture."

**Cayley, Dorothy M.**

"Breaking" in tulips. *Gard. Chron.* **83**(2164): 435-436, 1928. (*Ann. Appl. Biol.* **15**(4): 529-539, 1928.)

The author gives the results of experiment proving that the disease is infectious and transmissible.

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Ecological studies of curly-top of sugar beets. *Phytopathology* **19**(5): 467-477, 1929.

A discussion of the environmental factors under which the symptoms are increased or decreased.

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Ecological studies of the beet leafhopper (*Eutettix tenella*).

U. S. D. A., *Tech. Bull.* **806**, 114 p., 1930.

This paper does not contain any data on virus diseases but is of interest because of the relation of the insect to the curly top of sugar beet.

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"Breaking" in tulips. II. *Ann. Appl. Biol.* **19**(2): 153-172, 1932.

The disease is transmitted by grafting and by inserting plugs of diseased tissue into healthy bulbs. Experiments with filtered sap, have given negative results. Experiments of transmission to promote breaking have given negative results. The variety Keizerskroon is a true bicolor and the pattern is not of a virus.

**Geresa, G.**

Control de la enfermedad del "Mosaico", (Mosaic disease control). *Rev. Agric. Com. & Trab. Cuba* **8**(1): 5-9, 1926.

**Chapman, G[eorge] H[enry]**

Investigation relating to mosaic disease. *Massachusetts Agric. Expt. Sta. Ann. Rpt.* **20**: 136-144. 1908.

Compares tomato and tobacco mosaic, describes the former, gives results of studies with fertilizers and on the catalase of the plant. Also discusses susceptibility.

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Mosaic allied diseases, with especial reference to tomato and tobacco. *Massachusetts Agric. Expt. Sta. Ann. Rpt.* **25**: 94-104, 1913.

Tobacco mosaic causes losses of more than one million dollars. Tomato mosaic in greenhouses only, and of little importance. Disease is physiological and may be caused by injuries to roots, improper sterilization of the seedbeds, etc. Not caused by mineral fertilizers. Infectious. Not contagious.

-----  
Effect of colored light on the mosaic disease of tobacco. Science n.s. **43**(1111) : 537-538, 1916.

Gives the results of experiments to determine the effects of colored lights on tobacco mosaic. This is discussed more fully in Bull. **175** published in 1917.

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Mosaic disease of tobacco, Massachusetts Agric. Expt. Sta. Bull. **175** : 75-117, 1917.

An extensive study giving a historical summary, a description of the disease, occurrence, economic importance, infectious nature, pathological anatomy of plant, methods of transmission, the effects of fertilizer and colored lights. Also a study of the enzyme activity of the plants. Believes the disease is due to a disturbance of the enzyme activities.

#### Chapple, J.

A method of potato management for preventing the curl. Path. and West of England Soc. Papers **7** : 350-351, 1795.

Historical value.

#### Chardon, Carlos E[ugenio]

Informe anual del Patólogo Especial para el año fiscal de 1921-22. (Annual report of the Special Pathologist for the Fiscal year 1921-22.) Ins. Expt. Sta. Porto Rico Ann. Rev. **1921-22** : 67-74, 1922.

-----  
Resumen de la literatura del origen de las enfermedades del "Mosaico" en las plantas. (Review of the literature about the origin of "Mosaico" diseases of the plants.) Rev. Agric. Puerto Rico **9**(4) : 13-22, 1922.

A review of the literature and list of publications.

-----, & Veve, R[afael] A.  
Sobre la transmisión del matizado de la caña por medio de insectos. (About the transmission of sugar cane mosaic by means of insects.) Memoirs Ass'n, Sugar Tech. Porto Rico **1**(1) : 9-12, 1922. (Rev. Agric. Porto Rico **9**(2) : 9-20.) 1922. Facts About Sugar **15**(14) : 281-284, 1922. Louisiana Planter & Sugar Manuf. **69**(19) : 323-324, 1922.

Give the results of experiments which proved that *Aphis maidis* is a carrier.

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 The transmission of sugar cane mosaic by *Aphis maidis* under field conditions in Porto Rico. *Phytopathology* **13**(1): 24-29, 1923. (*Rev. Appl. Mycol* **2**: 390-391, 1923. *Rev. Appl. Ent. ser. A.* **12**(2): 40, 1924. *Rev. Agric. Com. & Trab.* (Cuba **7**(2): 37-41, 1924.)

This paper gives the results of experiments which demonstrate that the disease is carried by *Aphis maidis*. Also some grass host of the disease. The same discussion in the preceding article.

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 La relación de ciertas yerbas con el matizado de la caña de azúcar. (Relation of certain weeds with sugar cane mosaic.) *Rev. Agric. Puerto Rico* **12**: 305-314, 1924. (*Rev. Appl. Ent. ser. A.* **12**(2): 40, 1924.) *Rev. Agric. Com. & Trab.* (Cuba **7**(2): 37-41, 1924.)

A study of the disease with special reference to *Aphis maidis* and certain grass hosts.

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 La transmisión del mosaico. (Transmission of mosaic.) *Sugar* **25**: 477-478, 1924.

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 Mosaic investigations at Central Cambalache. (Preliminary Report). *Journ. Dept. Agric. Porto Rico* **8**(2): 27-39, 1924, (*Int. Sugar Journ.* **27**(324): 649-651, 1925. *Rev. Appl. Mycol.* **4**: 505-506, 1924. *Rev. Agric. Puerto Rico* **13**: 205-218, 1924. *Facts About Sugar* **19**: 569, 1924.)

-----  
 "Mosaic" o matizado de la caña de azúcar. ("Mosaic" or mottling of sugar cane.) *Rev. Agric. Puerto Rico* **14**: 188-197, 1925. (*Rev. Appl. Mycol.* **4**: 635, 1925.)

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 La revolución de las variedades de caña en Puerto Rico. (The varietal revolution of Sugar cane in Porto Rico.) *Rev. Agric. Puerto Rico* **18**: 117-127, 1927. (*Rev. Appl. Mycol.* **6**: 581, 1927. *Planter & Sugar Manuf.* **78**(22): 429-430; (23): 451-453, 460, 1927. *Journ. Dept. Agric. Porto Rico* **11**: 9-41, 1927.)

This paper includes a discussion of the relation of mosaic to the varietal revolution of sugar cane in Porto Rico.

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 The agricultural revolution in Porto Rico. *Facts About Sugar* **22**: 894-897, 1927.



**Chatterju, N. C., et al**

Investigations on the spike-disease of Sandal. I. Résumé of the observations made to date. II. Report of progress made during the quarter ending 30th June, 1931, Indian Inst. of Sci. Bangalore, 16 p., 1931.

A review of the history of the disease and a sketch of recent work.

**Cheal W[illiam] F[rank]**

Investigations of hop mosaic disease field. Ann. Appl. Biol. 16(2) : 230-235, 1929.

Proof that the disease is infectious and can be introduced by carrier plants.

**Chevalier, Aug[ust]**

Sus l'extension et la propagation de la maladie de la rosette d'Arachide au Senegal. Comp. Rend. Acad. Sci. (Paris) 193 (22) : 1115-1117, 1931.

The virus of the peanut rosette is transmitted by *Aphis laburni*. The disease also attacks the Sakhagayer, a peanut growing on fallow land. This appears earlier than the cultivated peanut and carries the disease from year to year.

**Chiel, The**

Stripe sick cane. South Africa Sugar Journ. 9 : 439-440, 1925.

The author believes that the stripe disease is a form of mosaic.

**Christie, G[eorge] I[rving]**

Report for 1921 of the Department of Botany. Indiana Agric. Expt. Sta. Ann. Rpt. 1921 : 14-19, 1921.

**Chu, H.**

(The speciality of mosaic disease.) Ent. & Path. Hangehow, China 2(12) : 219-240, 1934.

**Church, Margaret B[rooks]**

The relation of mosaic disease to pickling of cucumber. Phytopathology 11(1) : 28-29, 1921.

A study of the effect of the disease on the pickling quality of the cucumber.

**Ciferri, R[afael]**

Measuring the intensity of discoloration of sugar cane leaves. Proc. Fourth Congr. Intern. Sec. Sugar Cane Technologists, 1932. (Facts About Sugar (Abstract) 27(6) : 260, 1932.)

The author describes his procedure and observations with the Moll nephelo-absortimeter while measuring the intensity of light through

leaves of "Cristalina" variety of sugar cane which is susceptible to mosaic. The infected leaves showed that the opacity is about 27% greater than that of healthy foliage and practically constant.

-----  
 Thickness of mottled and healthy sugar cane leaves. Proc. Fourth Intern. Congr. Soc. Sugar Cane Technologist, 1932. (Facts About Sugar (Abstract) 27(6):260, 1932.)

Based on 17,620 micrometric measurements with galvanometric control of the thickness of mottled and healthy leaves of sugar cane varieties susceptible to mosaic. He observed that the diseased leaves are slightly thicker than the healthy ones.

### Cláusen,

Die Blattrollkrankheit der Kartoffel. (The leaf roll disease of potato.) Märkischer Landwirt. 3:503, 1922. (Landw. Wochenbl. Schlezw. Holst. 72:587, 1922.)

### Clayton, E[dward] E[astman]

Effect of early spray and dust applications on later incidence of cucumber wilt and mosaic diseases. Phytopathology 17(7):473-481, 1927.

The most important vector is the striped beetle. Bordeaux and lead arsenate sprays led to a reduction in the mosaic due to control of insects. The spray treatments were better than the dust treatments.

-----  
 Breeding for resistance to cucumber mosaic disease. Phytopathology (Abstract) 19(1):85-86, 1929.

-----  
 A study of the mosaic disease of crucifers. Journ. Agric. Res. 40(3):263-270, 1930.

The mosaic of swede turnips (*Brassica napobrassica*) does not appear to be serious. It is carried by the cabbage aphid (*Brevicoryne brassicae*). Cauliflower and Brussel sprouts are slightly susceptible. Cabbage is highly resistant or immune. Chinese cabbage (*B. chinensis*), cultivated white (*B. alba*) and black mustard (*B. nigra*) and rape (*B. napus*) are susceptible. The symptoms vary on different hosts and are usually most severe at 65 to 75 degrees F.

-----  
 Cucumber disease investigations on Long Island. New York (Geneva) Agric. Exp. Sta. Bull. 590, 20 p., 1931.

Conclusions are given that the only way of controlling mosaic, the chief cause of the decline of cucumber in Long Island, is by developing resistant varieties.

**Cleare, L[aurence] D[elaney] Jr.**

Report of the Biological Division. British Guiana Dept. Agric. Ann. Rpt. 1924: 65-68, 1926. (Rev. Appl. Ent. ser. A. 14: 238, 1926.)

**Cleveland, C[larence] R[ugg]**

The relation of insects to the transmission of potato leafroll and tomato mosaic in Indiana. Indiana Agric. Expt. Sta. Bull. 351, 24 p., 1931.

The author gives a relation and importance of insects as carriers of diseases, especially on tomato and potato. He gives methods of control and spraying schedules.

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The relation to the transmission of potato leafroll and tomato mosaic in Indiana. Indiana Agric. Expt. Sta. Bull. 351, 24 p., 1931.

Considerations as to the different degrees of importance of the different insect vectors, e. g. the aphid *Myzus persicae*, the leafhopper *Empoasca fabae*, the pink and green potato aphids *Macrosiphum solanifolii* (*M. gei*) and the flea beetle *Epitetrix cucumeris* in the spread of mosaic on potato. In regard to tomato mosaic *M. persicae* is believed to be mainly responsible for transmission from tomato to tomato the potato leafhopper, *Empoasca fabae*, the onion thrips *Thrips tabaci* and the common red spider *Tetranychus telarius* are considered capable of transmitting tomato mosaic.

**Cleveland, L[emuel] R[oscoe]**

Some problems that may be studied by oxygenation. Science 63: 168-170, 1926.

The author suggests the studying of a large number of diseases, including virus diseases by a method of oxygenation.

**Cleveringa, O. J.**

Verschillende belangrijke oonten voor het pootgoedoraagstuk bij aardappelen, in her bijzonder ook de rol die de afdeelingen, (del landbouwmaatsprijen) daarbij Kunnen vervullen. Tijdschr. Plantenz. 30(2): 17-26, 1924.

Certified seed gave good yield the first year but there was a rapid decrease the following years as a result of infection by virus diseases.

**Clinch, Phillis**

Cytological studies of potato affected with certain virus diseases. Sci. Prov. Roy. Dublin Soc. 20(15): 143-172, 1932.

Detailed account of the author's cytological investigations of potato plants affected with certain virus diseases. Those types considered were: simple mosaic, crinkle, interveinal mosaic, aucuba mosaic, streak, and leafroll.

**Clinton, G[eorge] P[erkins]**

Chlorosis troubles. Illinois Agric. Expt. Sta. Bull. **40**, p. 139, 1895.

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Chlorosis troubles, aster, peach, raspberry yellows and tobacco calico. Connecticut Agric. Expt. Sta. Ann. Rpt. **1903**: 305, 341, 355, 363, 1903.

Gives record of mosaic disease on many plants.

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Report of botanist. Connecticut Agr. Expt. Sta. Rept. **1905**: 270-273, 1906.

Description of a disease of onions called brittle on account of the brittleness of the leaves; although not described as a virus disease it appears as an early record of the disease which recently has been proved to be due to a virus and known as dwarf.

-----  
Lima bean chlorosis and tobacco calico. Connecticut Agric. Expt. Sta. Ann. Rpt. **1907**: 341, 362, 1907.

Gives record of mosaic disease in many plants.

-----  
Notes on fungus diseases etc. for 1908. Connecticut Agric. Expt. Sta. Ann. Rpt. **1908**: 857-858, 865-866, 872-979, 1909.

Muskmelon chlorosis and mosaic diseases on several plants. Peach yellows and so-called yellows.

-----  
Thirty-third and Fourth Reports of the Botanist. Connecticut Agric. Expt. Sta. (New Haven) Rpt. **33-34**: 735, 1910.

Gives record of mosaic disease in many plants.

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Tobacco calico. Connecticut Agric. Expt. Sta. Bull. **166**: 10, 1913.

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String leaf tobacco. Connecticut Agric. Expt. Sta. Ann. Rpt. **1913**: 27, 1913.

Gives record of mosaic disease in many plants.

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Chlorosis of plants with special reference to calico of tobacco. Connecticut Agric. Expt. Sta. Ann. Rpt. **1914**: 357-423, 1915.

Gives a discussion of types of chlorosis, nomenclature, host prevalence, distribution, review of literature and results of his own experiments.

-----  
Mosaic or white pickle. Connecticut Agric. Expt. Sta. Ann. Rpt. **1915**: 430-431, 1916.

A record. Also a record of chlorosis and crinkling of soy bean on page 446.

Notes on plant diseases of Connecticut. Connecticut Agric. Expt. Sta. Rept. **1915**(6): 421-451, 1916.

Contains records.

New or unusual plant injuries and diseases found in Connecticut, 1916-19. Connecticut Agric. Expt. Sta. Bull. **222**: 397-482, 1920.

Records of chlorosis on *Celastrus scandens* and *Ribes vulgare*.

Peach "Yellow" Nature and cause of mosaic disease of plants. Connecticut Agric. Expt. Sta. Director's Rpt. **1924**: 207, 1925.

Very brief reference.

-----, & **Anderson, P. J.**

Tobacco diseases observed in 1926. Connecticut Agric. Expt. Sta. Tobacco. Sta. Bull. **8**: 55T-57T, 1927.

-----, & **McCormick, F[lourence A.]**

Tobacco mosaic. Connecticut Agric. Expt. Sta. Tobacco Sub-Sta. Bull. **10**: 75T-82T, 1928.

### **Cockerham, G.**

Variations in the total nitrogen content of normal and leafroll potatoes. Proc. Leeds. Phil. & Lit. Soc. (Sci. Sect.) **2**(8): 375-382, 1933.

Considerations of the pronounced disturbances in the metabolism of nitrogenous substances within the potato due to the presence of the leafroll virus. Discussion of results obtained with a great deal of tabulated data.

### **Coit, J. E.**

Sun-blotch of the avocado, a serious physiological disease. California Avocado Assoc. Yearbook, p. 27-32, 1928.

This paper was written before it was demonstrated that the disease was due to a virus.

### **Colby, A. S., & Anderson, H. W.**

Diseases of brambles in Illinois and their control. Illinois Agric. Expt. Sta. Circ. **305**, 1926.

Several virus diseases of brambles are described.

**Coleman, Leslie C[harles]**

Spike disease of sandal. Mysore State Dept. Agric. Mycol. ser. Bull. 3, 52 p., 1918.

After discussing the conditions under which the disease appeared the author concludes that it is a virus disease comparable to other virus diseases in behavior and that it is communicated by grafting and insects. The accumulation of starch in the leaves and the dying of root tips and haustoria are definite symptoms. This appears to be the first paper giving evidence that the disease is caused by a virus.

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Transmission of sandal spike. Indian Forester 49(1) : 6-9, 1923.

Gives proof by means of grafting that this disease is due to a virus.

**Colón, E[mundo] D[imas]**

La enfermedad de las rayas amarillas. (Yellow stripe disease.) Porto Rico Ins. Expt. Sta. Circ. 14 : 3-6, 1918.

Popular account of this disease new to Porto Rico.

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Yellow stripe of sugar cane. Porto Rico Ins. Expt. Sta. Ann. Rept. 1918-19 : 66-68, 1919.

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The absorption spectrum of the chlorophyll in yellow striped sugar cane. Journ. Dept. Agric. Porto Rico. 3(4) : 43-53, 1919.

These studies indicated that there is no decomposition of chlorophyll.

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La enfermedad de las rayas amarillas. (Yellow stripe disease.) Sugar 21 : 52, 1919.

A brief popular discussion.

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Trabajos de investigación durante el año Fiscal 1919-20. Research work during the Fiscal year 1919-20. Rev. Agric. Puerto Rico 6(3) : 7-14, 1921.

A review of work done at the Insular Experiment Station of Puerto Rico.

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Chemical changes in yellow striped sugar cane. Porto Rico Ins. Expt. Sta. Ann. Rpt. 1920-21 : 18-19, 1921.

**Condit, I[ra] [Judson], & Horne, W[illiam] T[itus]**

A mosaic of the fig in California. Phytopathology (Abstract) 23(1) : 7, 1933.

Account of a disease which appears to be a true mosaic of fig. No insect vector of the disease has been detected. Transmission is discussed.

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A mosaic of the fig in California. *Phytopathology* **23**(11): 887-896, 1933.

A more detailed account than the preceding abstract and well illustrated. The authors discuss mosaic symptoms, variety susceptibility, vectors and field laboratory studies.

**Cook, Melville T[hurston]**

Peach yellows and little peach. *Bot. Gaz.* **72**(4): 250-255, 1921.

Gives the results of histological studies to determine the translocation of starch.

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The dissemination of peach yellows and little peach. *Phytopathology* **12**(3): 140-141, 1922.

Evidence that these diseases are transmitted in nursery stock.

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Estudio sobre la causa del matizado. (Studies on the cause of mottling.) *Rev. Agric. Puerto Rico* **13**(6): 373-376, 1924. (*Rev. Appl. Mycol.* **4**: 378, 1924).

A discussion of virus diseases with special reference to sugar cane mosaic.

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The search for the cause of mosaic. *Facts About Sugar* **19**(24): 570-571, 1924.

A popular paper.

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Present knowledge of mosaic disease. *Journ. Dept. Agric. Porto Rico* **8**(2): 50-54, 1925, (*Int. Sugar Journ.* **27**(324); 647-648, 1925.)

Popular.

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Studies on the cytology of sugar cane mosaic. *Phytopathology* (Abstract) **15**(1): 45, 1925.

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The control of sugar cane mosaic. *Facts About Sugar* **20**(30): 67-68, 1925.

A popular discussion of the disease in Porto Rico.

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El dominio del matizado de la caña de azúcar. (The control of sugar cane mosaic.) *Rev. Agric. Puerto Rico* **14**(1): 7-9, 1925.

A popular discussions of the disease in Porto Rico.

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 Histology and Cytology of sugar cane mosaic. Journ. Dept. Agric. Porto Rico **9**(1):5-27, 1925. (Rev. Appl. Mycol. **5**:387-388, 1925. Rev. Agric. Porto Rico **15**:291-293, 1925.)

The author gives a review of the literature on this phase of the subject and the results of his own studies. The chlorosis areas are slightly thinner than the green areas. The green areas are the same as a healthy leaf of the same age. The intracellular bodies are present but difficult to find. Chloroplasts are smaller and fewer in chlorotic than in healthy cells.

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 Sugar production and cane diseases. Facts About Sugar **20**(45):1068-1069, 1925. (Rev. Appl. Mycol. **5**:187, 1925. Rev. Agric. Puerto Rico **15**:273-276, 1925).

Popular.

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 El mosaico de la caña de azúcar en Puerto Rico. (Sugar cane mosaic in Porto Rico). Rev. Agric. Puerto Rico **17**(5):6, 13, 1926. (Facts About Sugar **22**(9):203, 1927. Rev. Appl. Mycol. **6**:318-319, 1926.)

Popular.

-----  
 Photo-synthesis of the sugar cane plant. Journ. Dept. Agric. Porto Rico **10**(3-4):239-242, 1926. (Rev. Appl. Mycol. **7**:198, 1926.)

The author reviews the literature on this phase of the subject and makes comparative studies of sugar-cane mosaic with his previous studies on peach yellow and little peach. In the case of sugar cane the chlorotic areas do less photosynthetic work than the green areas but the translocation of carbohydrates is normal. In the case of peach yellows and little peach the translocation of carbohydrates is almost or completely inhibited.

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 Relationship of cane varieties to diseases. Journ. Dept. Agric. Porto Rico **9**(4):277-282, 1926. (Rev. Appl. Mycol. **6**:376, 1926.)

Contains a brief reference to mosaic.

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 The effect of mosaic on the content of plant cell. Journ. Dept. Agric. Porto Rico **10**(3-4):229-238, 1926. (Rev. Appl. Mycol. **7**:197, 1928.)

The author gives a review of the literature and the results of his own studies. The chlorotic areas are indistinct in the very young leaves. They became distinct with exposure to light. Later the chlorotic areas tend to become green. The chloroplasts are smaller and



fewer in number than in the green areas, but increase in size and number with age. The chlorotic areas increase in size as a result of cell growth and cell division and not by the encroachment of the virus on the surrounding cells. The nuclei are usually enlarged and deformed.

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Some effect of mosaic on the contents of the cells. *Phytopathology* (Abstract) **17**(1): 57, 1927.

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The effects of some mosaic diseases on the cell structure and the chloroplasts. *Phytopathology* (Abstract) **20**(1): 142, 1930.

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The effect of some mosaic diseases on cell structure and on the chloroplasts. *Journ. Dept. Agric. Porto Rico* **14**(2): 69-101, 1930.

The author gives a review of the literature and the results of his own studies which are a continuation of previous studies in which he has used sugar cane, canna, tobacco, tomato and cowpea. The chlorotic areas are thinner than the green areas. The active agent inhibits the differentiation of the cell structure and of the chloroplasts. The earlier the attack, the greater the inhibition. The active agent does not penetrate the various parts of the leaf equally. The result is the chlorotic areas and variations in cell differentiation. There is no reason to believe that structure and development of chloroplasts are modified by the virus. It is a true case of inhibition. The development of cell structure is permanently checked but the chloroplasts of the chlorotic areas increase in size and number.

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Distribución geográfica de las enfermedades de la caña de azúcar. (Geographical distribution of sugar cane diseases. *Rev. Agric. Puerto Rico* **25**(5): 170-172, 1930. (Facts About Sugar **26**(1): 24-26, 1931.)

A chart is given with explanatory notes showing the distribution of sugar cane diseases throughout the world.

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La situación actual en enfermedades de la caña de azúcar en Puerto Rico. (The present situation of sugar cane diseases in Porto Rico.) *Rev. Agric. Puerto Rico* **24**(12): 227-231, 1930.

Brief notes on sugar-cane mosaic disease in Puerto Rico. Advocates Prof. Earle's recommendations in regard to control methods, i.g. "roguing" and the planting of immune or resistant varieties.

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Enfermedades de la caña de azúcar en Puerto Rico. (Sugar cane diseases in Porto Rico.) Ins. Expt. Sta. Puerto Rico, Circ. 94: 14-19, 1931.

Sugar-cane mosaic disease is the most important in Puerto Rico. In this paper the author discusses briefly the disease. Includes a short list of grasses which are also susceptible to sugar-cane mosaic.

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Undescribe symptoms of mosaic in Porto Rico. Phytopathology (Abstract) 21(1): 117, 1931.

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New virus diseases in Porto Rico. Phytopathology (Abstract) 21(1): 124, 1931.

Some unreported virus diseases are briefly described. 1. A mosaic of *Crotalaria striata*; 2. A rare mosaic of *Commelina longicaulis*; 3. A bunchy-top of *Carica Papaya*; 4. A variegation of *Abutilon hirtum*; 5. A variegation of several species of *Sida*; 6. A mottling of mulberry.

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Some undescribed symptoms of mosaic in Porto Rican Tobacco. Journ. Dept. Agric. Porto Rico. 15(2): 189-191, 1931.

The author gives the results of cross-inoculation experiments and of studies on the histology of leaves of various ages. The results of these later studies are, (1) When leaves are inoculated before the tissues are fully differentiated there is an inhibition of the development of cell structure and chloroplastic; (2) When chlorotic areas are formed on leaves with fully developed tissues there is no change in cell structure but the growth of the chloroplasts was inhibited; (3) That the enlargement of the mosaic areas on young leaves is due to cell division and growth and not to invasion of surrounding cells by the virus.

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The leaf spots of tobacco; an after symptom of mosaic. Journ. Dept. Agric. Porto Rico. 15(2): 183-187, 1931.

This appears to be the same as the spot described by Mayer in 1886 and which Iwanowski and Polowzoff described later as "pockenkrankheit". The author believes these spots to be a late symptom of tobacco mosaic.

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New virus diseases of plants in Porto Rico. Journ. Dept. Agric. Porto Rico, 15(2): 193-195, 1931.

This paper records mosaic on *Adenoropium gossypifolium* and *Ipomoea nil*.

-----  
The effect of mosaic on cell structure and chloroplasts. Journ. Dept. Agric. Porto Rico. 15(2): 177-181, 1931.

The author reports the result of studies of the effect of mosaic on the cell structure and chloroplasts of *Capsicum annuum*, *Crotalaria striata*, *Carica papaya*, *Eucharis amazonica* and a hybrid *Amaryllis*. The results confirm the author's previous opinion that the effect of many viruses is inhibitory.

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Action inhibitrice du virus des mosaïques sur l'évolution cellulaire. (Inhibitory action of mosaic virus in the cellular evolution.) Deuxième Congrès international de Pathologie Comparée. p. 1-8, 1932.

This paper is a résumé of some of the work of the author published in "The Journal of the Department of Agriculture of Puerto Rico".

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Virus diseases of plants. Sci. Monthly. 36(4):355-359, 1933.  
Popular.

**Cook, O[rator] F[uller]**

Leaf-cut or tomatosis, a disorder of cotton seedling. U. S. D. A. Circ. 120:29-34, 1913.

This is a brief discussion of a disease which may be due to a virus.

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Branchysm, a hereditary deformity of cotton and other plants. Journ. Agric. Res. 3:387-399, 1915.

It has not been proved that this is a virus disease but it has many of the characteristics of this group of plant diseases.

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A disorder of cotton plants in China: club-leaf or cyrtosis. Journ. Heredity 11:99-110, 1920.

A description of the disease with evidence that it is due to a virus.

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Malformation of cotton plants in Haiti. A new disease named smalling or stenosis, causing abnormal growth and sterility. Journ. Heredity 14(7):323-335, 1923.

The author describes a disease which he calls "smalling" or "stenosis". Certain characters resemble some of the virus diseases but it is neither contagious nor infectious.

-----  
Acromania or "crazy-top" a growth disorder of cotton. Journ. Agric. Res. 28(8):803, 1924.

It is known that this disease is caused by a virus. The author describes the symptoms of this disease and also of brachysm, tomosis, hybosis, cyrtosis and stenosis.

**Cooley, L. M., & Rankin, W[illiam] H[oward]**

Virus disease control experiments in black raspberry plantings in 1931. New York (Geneva) Agric. Expt. Sta. Bull. **601**: 3-6, 1931.

The results of the work. A brief report.

Mild streak of black raspberries. *Phytopathology* **22**(11): 905-910, 1932.

A description of a disease which is believed to be due to a virus. The cause has not been proved.

**Coons, G[eorge] H[erbert]**

The potato disease of Michigan. Michigan Agric. Expt. Sta. Bull. **66**, 31 p. 1914.

Popular paper describing diseases, including virus diseases.

Notes on plant diseases of Michigan. (Cucumber mosaic of white pickle.) Michigan Acad. Sci. **17**: 125-126, 1915.

Michigan potato diseases. Michigan Agric. Expt. Sta. Sp. Bull. **85**, 49 p., 1918.

Popular descriptions with illustration and distribution in Michigan are given about the following diseases: Curly-dwarf, leaf-roll, and mosaic. Methods of control are also given.

**., & Kotila, J[ohn] E[rnest]**

Mosaic in potato seed stock. Michigan Agric. Expt. Sta. Quart. Bull. **4**(4): 135-138, 1922.

Popular.

Michigan potato diseases. Michigan Agric. Expt. Sta. Sp. Bull. **125**: 3-55, 1923.

Popular.

**., et al.**

Sugar beet strains resistant to leaf spot and curly top. U.S.D.A. Yearbook **1931**: 493-496, 1931.

**Cooper, T[homas]**

Mosaic disease of potato and tobacco. Kentucky Agric. Expt. Sta. Ann. Rpt. **1922**(1): 22-24, 37-38, 1922.

**Cordingley, H., Grainger, J., Pearsall, W. H., & Wright, A.**

The effect of mosaic disease upon certain metabolic products in the tobacco plant. Ann. Appl. Biol. **21**(1): 79-89, 1934.

Based on analysis, the authors found that a higher proportion of

nitrogen than of carbohydrates was present in the tobacco plant infected with mosaic disease. In diseased leaves protein breakdown is retarded and insoluble substances are less readily hydrolysed. The diseased leaves resemble older leaves in their metabolism.

### Corneli, E.

Mal del mosaico su Patate. Ruggine su Grano in autunno. Mal del piombo su Peschi. (Mosaic disease of potatoes. Rust of wheat in Autumn. Silver leaf of peaches.) Riv. Pat. Veg. **23**(1-2): 51-52, 1933.

Brief notes on the occurrence of mosaic disease of potatoes in Perugia (Italy). Description of the disease.

### Costa Lima, Angelo da

A propósito de una comunicacao do Dr. Puttemans sobre o mosaico da cana de assucar. (About letter from Dr. Puttemans related to sugar cane mosaic disease. Characas e Qui-taes **34**: 30-42, 1926.

-----  
(Mosaic and thrips in Brazil) Bol. Agric. Ind. Comm. Brazil **2**: 38-41, 1926.

The writer believes that *Thrips minuta* var *Puttemansi* is the vector for mosaic of sugar cane.

### Costantin, Julien [Noel]

La dégénérence des plantes cultivées et l'hérédité des caractères acquis. (The degeneration of cultivated plants and the inheritance of acquired characteristics.) Ann. Soc. Nat. Bot. **4**: 267-297, 1922.

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Cure d'altitude, (Altitude cure) Ann. Sci. Nat. Bot. ser. **10**, **6**: 271-283, 1924.

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A propos des mutations de la pomme de terre. (Concerning mutations in the potato.) Ann. Sci. Nat. Bot. ser. **X**, **6**(5-6): 17-40, 1924.

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Un nouvel essai sur les Pommes de terre montagnardes. (A new test on highland potatoes.) Ann. Sci. Nat. Bot. **8**(3-6): 355-362, 1926.

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Un programme pour la lutte contre la dégénérescence des Pommes de terre. (A program for the fight against the degeneration of potato.) Ann. Sci. Nat. Bot. **9**(1): 281-284, 1927.

La cure d'altitude, son emploi et son efficacité en végétalé. Essai d'une théorie de ce phénomène. (Altitude is used successfully as a cure in plant pathology. Essay of theory on that phenomenon.) *Ann. Sci. Nat. Bot.* **9**(2): 299-369, 1927.

L'emploi des hybrides javanier de la canne a sucre contre le Sereh et mosaïque. (The use of javanese sugar cane hybrids against sereh and mosaic diseases. *Rev. Bot. Appl. Agric.* Col. **9**(93): 229-240, 1929.

A review of the work on hybrids for the purpose of obtaining canes that are resistant to sereh and mosaic.

Les certificats phytopathologique de non-dégénérescence de la pomme de terre dans l'Amérique du Nord. (Phytopathological certificates attesting the freedom of potatoes from degeneration diseases in North America.) *Comp. Rendus Acad. des Sci.* **14**: 534-536, 1930.

The author gives a brief note of the results obtained in United States and Canada in controlling potato virus diseases.

Influence de L' Altitude en Pathologie Végétale. (Influence of altitude in plant pathology.) *Rev. Bot. Appl. & Agric. Trop.* **10**(3): 851-860, 1930.

-----, & Lebard, P[aul]

Cultures experimentales de la pommes de terre dégénérées et saines en montagne et en plaine. (Experimental cultures of degerated and healthy potatoes in the mountain and in the plain. *Acad. d'Agric. de France* **16**(30): 1006-1010, 1930. (*Compt. Rend. Acad. Sci.* 191(22): 1038-1041, 1930.)

After experimentation the authors conclude that the favorable influence of the climate at high altitude can not operate unless rigid selection is practiced.

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Accroissement de la résistance à la maladie par l'altitude. (Increase of resistance to the disease with the altitude.) *Journ. Agric. Prac.* **1**(39): 249-250, 1930.

Review of the observations of the behavior of different types of virus diseases and different host plants, to altitude.

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Hérédité montagnarde acquise a la canne á sucre. Mountain heredity acquired by the sugar cane.) *Comp. Rendus Acad. des Sci.* **195**(5): 345-347, 1932.

This paper summarizes the studies on resistance to degeneration diseases acquired by mountain-grown canes and calls attention to a correlation with morphological characters.

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Importance de la mosaïque de la canne au point de vue de la dégénérescence. (Importance of cane mosaic under the point of view of degeneration.) *Comp. Rend. Sci. (Paris)* 194(19) : 1614-1616, 1932.

Resistance to mosaic has been increased in Java by growing crops on mountain elevation.

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La mosaïque de la canne à sucre. (Enseignements découlant de sa récente histoire.) (Sugar cane mosaic. What its recent history has taught us.) *Agron. Col.* 21(176) : 41-51, 1932.

A general review of the subject. He believes that the reduction in mosaic in POJ varieties is due to this mountain origin.

-----  
Technique de la lutte contre les maladies de dégénérescence  
Perfectionnements importance pour l'agronomical coloniale.  
*Agric. Prat. Pays Chauds* 3(22) : 241-250, (23) : 321-336, 1932.

Diseased and healthy potatoes were planted. Healthy potatoes gave higher yields than the diseased and the diseased potatoes in high altitudes gave higher yields than in the lower elevation.

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Les curieux cas de variétés mosaïquées à cent pour cent. (Curious case of mosaic varieties 100%.) *Compt. Rend. Acad. Agr. de France.* 18(34) : 1149-1155, 1932.

Mention of sugar cane and potato mosaic.

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Rôle des montagnes en agriculture. (The role of mountains in agriculture.) *Rev. Agric. France.* 64(12) : 350-354, 1932.

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Le secret de Java. (The Java secret) *Compt. Rend. Acad. Sci. Paris* 195(19) : 741-744, 1932.

In this article the author refers to the success obtained in Java breeding cane seedlings at high altitudes to prevent sereh disease. He claims it, as a prove to cure of the "altitude" for certain diseases.

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Expériences sur la cure en montagne de la pomme de terre. (Experiences on the mountain cure of the potato.) *Ann. Sci. Natur. Bot.* 14(2) : 327-341, 1932.

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Variations de la virulence dans les dégénérescence de pomme de terre. (Variations in virulence in the degeneration of potatoes.) *Compt. Rend. Acad. Sci.* **196**(17):1186-1189, 1933.

General account on virus diseases virulence especially on the potato.

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L'immunité de la canne P. O. J. 2878 est-elle absolue? (Is the immunity of the cane P. O. J. 2878 absolute?) *Compt. Rend. Acad. Sci.* **196**(18):1261-1264, 1933.

This article refers to the immunity of P. O. J. 2878 cane to scorch disease.

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Résumé historique se rapportant á la genése des conceptions sur la dégénérescence des plantes cultivées. (Historical summary about the origin of the conception of the degeneracy of cultivated plants.) *Compt. Rend. Acad. Sci.* **196**(7):449-451, 1933.

#### Cottier, W.

The transmission of virus disease of the potato by insects leaf-roll. *New Zealand Journ. of Sci. and Tech.* **13**(2):85-95, 1932.

Experiments were conducted which demonstrated that leaf-roll of potato was transmitted by *Myzus persicae*, but not by *M. pseudosolani*, *Macrosipium gei*, *Erythroneura Zealandica*, *Thrips tabaci* or *Melanphthalma gibbosa*. The shortest period of incubation in the plant was 29 and the longest 51 days.

#### Cotton, A[rthur] D[isbrowe]

Mosaic disease of potatoes. *Journ. Ministry Agric. Great Britain* **28**:335-340, 1921.

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Mosaic disease of potatoes. *Gard. Chron.* **70**:131, 1921.

Popular.

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The situation with regard to leaf-curl and mosaic in Britain. *Roy. Hort. Soc. Inter. Potato Conf. Rpt.* **1921**:152-166, 1922.

Confirms work of Dutch and American students. Discusses susceptibility, environment and insects.

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Potato leaf-curl demonstration. *Journ. Ministry Agric. (Great Britain)* **28**(11):1019-1021, 1922.



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Diseases in cane. Further notes on the subject of cane diseases, mosaic. Queensland Br. of Sugar Expt. Sta. Director's Rpt. 24th Ann. Rpt. p. 54-57, 1924.

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Sugar pests and diseases in the Mackey District. Queensland Agric. Journ. **21**(5):363-368, 1924 (Rev. Appl. Mycol. **3**:686-687, 1924.)

Reports sugar-cane mosaic. *Aphis maidis* not reported in list of sucking insects.

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Sugar cane diseases in the South. Australian Sugar Journ. **16**:596-597, 604-605, 1924.

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The detection and control of lily diseases. Lily Yearbook, Roy. Hort. Soc. 1933. (Roy. Hort. Soc. (London) p. 194-210, 1933.)

The author describes mosaic disease which occurred in the following species of lilies: *Lilium longiflorum*, *L. trigrinum*, *L. humboldtii*, and *L. croceum*; in these species the disease appears in a mild form, while in *L. auratum*, *L. speciosum* and *L. caudidum* is much more severe. *Aphis gossypii* the insect vector is abundant. Control measures are given.

#### **Cottrell-Dormer, W.**

Iliau disease of sugar cane. Australian Sugar Journ. **16**:838, 1925.

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Diseases of sugar cane. Australian Sugar Journ. **16**:543, 545-546, 1924.

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Cane pests and diseases. Queensland Agric. Journ. **22**(4):275-277, 1924. (The Cent. Sugar Journ. **16**(12):833-835, 1924. Rev. Appl. Mycol. **4**:242, 1924.)

Contains brief reference.

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Cane diseases and pests. Queensland Agric. Journ. **23**(1):66-68, (4)271-272, 1925. (Rev. Appl. Mycol. **4**:267-268, 1925. Rev. Appl. Ento. ser. A. **13**:348 1925.)

Brief reference on mosaic of sugar cane.

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Report to the Director of the Bureau of Sugar Experiment Stations on mosaic disease in Mackay Areas. Australian

Sugar Journ. 18(1) : 53-54, 1926. (Queensland Agric. Journ. 25(4) : 316-319, 1926. Rev. Appl. Mycol. 5 : 632, 1926.)

Mosaic has increased 300 per cent in two years. Recommends that corn and sorghum should not be grown near cane. Gives list of susceptibility hosts. Also recommends removal of *Panicum colonum*, *P. sanguinale* and *Setaria aurea*. *Aphis maidis* was plentiful on *P. colonum*.

-----  
Sugar cane pests in the district of Proserpine and Mackay. Queensland Agric. Journ. 25(4) : 312-319, 1926. (Rev. Appl. Ent. ser. A. 14 : 365-366, 1926)

-----, & Wood, E. J. Ferguson.

Fiji disease situation in Queensland. Queensland Agric. Journ. 28(2) : 125-141, 1927.

A general discussion of the disease with special reference to the situation in Queensland.

**Cottrell, R[oy] H[udson]**

Résumé of the relation of curly-top to commercial sugar beet production. Utah Agric. Expt. Sta. Misc. Pub. No. 3, 1927.

**Cowdry, E[dmund] V[icent]**

The nature and significance of cellular inclusion bodies in diseases due to filterable viruses. Journ. Bact. 13(1) : 20-21, 1927.

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The micro-chemistry of nuclear inclusions in virus diseases. Sci. 68 : 40-41, 1928.

This paper has reference to virus diseases of animals but the method is of some interest to plant pathologists.

**Cowgill, H[orace] B[ranson]**

Report of the Plant Breeder. Porto Rico Ins. Expt. Sta. Ann. Rpt. 1917-1918, p. 78-104, 1918.

**Crawford, R[aymond] F[rank]**

Over-wintering of mosaic on species of *Physalis*. Phytopathology (Abstract) 11(1) : 47, 1921.

**Crawley, J[osiah] T[homas]**

Control of the mosaic disease in Cuba. Facts About Sugar 22 : 554-555, 1927. (Rev. Appl. Mycol. 6 : 752, 1927.)

Gives results of roguing and seed selection.

**Cross, W[illiam] E[rnest]**

The Kavangerie cane. Louisiana Planter & Sugar Manuf. **63**: 397-399, 1919.

Kavangerie proved to be immune. The author also gives a discussion of its desirable and undesirable qualities.

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Las posibilidades de las cañas de Java en Louisiana. (The possibilities of the Java canes in Louisiana.) Rev. Indus. Agric. Tucumán. **11**: 118-121, 1921.

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La Estación Experimental Agrícola de Tucumán. Su contribución a la Industria Azucarera de Puerto Rico. (The Agricultural Experiment Station at Tucumán. Its contribution to the Sugar Industry of Porto Rico.) Rev. Indus. Agric. Tucumán **13**(11-12): 207-211, 1923.

A controversy.

-----, & Fawcett, G[eorge] L[orenzo]  
La enfermedad del mosaico en Luisiana. (The mosaic disease in Louisiana.) La Industria Azucarera. Argentina **30**(376): 975-979, 1924.

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Cañas resistentes al mosaico en Tucumán. (Canes resistant to mosaic at Tucumán.) Industria Azucarera, Argentina **30**(370): 660-661, 1924. (Louisiana Planter & Sugar Manuf. **73**: 468-469, 1924. Facts About Sugar **19**(11): 250-251, 1924.) Int. Sugar Journ. **27**: 551, 1925.)

Popular. Deterioration of certain varieties believed to be due to mosaic. Controversy.

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La importancia de la enfermedad del mosaico en Louisiana y las posibilidades de éxito de las "Cañas de Java" en ese país. (The importance of mosaic disease in Louisiana and the possibilities of success of the "Java canes" in that country.) Rev. Indus. Agric. Tucumán **15**(1-2): 22-28, 1924. (Rev. Appl. Mycol. **4**: 123-124, 1925.)

A very general discussion of conditions in Louisiana.

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The problem of sugar cane yield in Louisiana. Facts About Sugar **18**: 442-443; **19**: 181-185, 442, 1924.

A comparison of mosaic conditions in Louisiana and Tucumán.

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El mosaico de la caña en Cuba. (Sugar cane mosaic in Cuba.)  
Rev. Agric. Com. & Trab. Cuba 7(4):9-10, 1924.

Popular.

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The problem of disease and other sugar cane yield factors in  
Louisiana. Facts About Sugar 18:442-443, 1924.

Contains a brief note on mosaic.

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Present needs in cane disease control. A rejoinder to Mr. A.  
H. Lee. Int. Sugar Journ. 27:26-31, 1925.

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Enfermedades de la caña de azúcar en Tucumán. (Sugar cane  
diseases in Tucumán.) Sugar 27(2):103-104, 1925.

-----  
La importación de la caña Kavangire en Puerto Rico. (Kavan-  
gire cane importation into Porto Rico.) El Mundo Azuca-  
rero 14(5):145-149, 1926. (Planter & Sugar Manuf. 77:327-  
330, 1926.)

Controversial.

-----  
The P.O.J.-979 variety in Tucumán. The Planter & Sugar  
Manuf. 78(1):8, 1927.

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The P. O. J. canes in Louisiana. Facts About Sugar 22:1230-  
1231, 1235, 1927.

**Cruz, Francisco B., & Bruner, S[tephen] C[ole]**

Una visita de inspección a la Zona de tabaco en Cabaiguan.  
(An inspection of the tobacco region of Cabaiguan.) Rev.  
Agric. Comercio y Trab. Cuba 13(10):34-38, 1931.

A variety known as Puerto Rico which is probably *Nicotiana lan-  
aeolata* is very susceptible to mosaic. A small planting of *N. hava-  
nensis* was almost free from the disease.

**Cunningham, G[ilbert] C[ameron]**

Report of the Dominion Field Laboratory of Plant Pathology,  
Fredericton, N. B. Canada Expt. Farms, Div. Bot. Interim  
Rpt. 1921:57-67, 1921.

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Report of Dominion Field Laboratory of Plant Pathology,  
Fredericton, N. B. Canada Expt. Farms, Div. Bot. Interim  
Rpt. 1921-22:23-30, 1922.

**Curtiss, C[harles] F[ranklin]**

Plant Pathology studies and Entomology work in Iowa Agricultural Experiment Station. Iowa Agric. Expt. Sta. Ann. Rpt. 1922: 24-35, 39-43, 1922.

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Mosaic diseases of cucumber and other plants. Iowa Agric. Expt. Sta. Ann. Rpt. 1923: 39-40, 1923.

First record for Iowa of several plants affected with mosaic diseases.

**Curzi, M[ario]**

Malattie del pesco caratterizzate de filliscosi ("Phony disease" e "malattie del pennacchio") Boll. Staz. Patol. Veget. Firenze 11(3): 221-243, 1931.

-----  
Su una clorosi maculata della rosa. (A chlorotic spot of rose.) Bull. R. Staz. Patol. Veg. 12(4): 365-376, 1932.

Description of a chlorosis on roses. The disease is supposed to be due to the varietal sensibility to soil alkalinity.

**Cuthbertson, D[avid] C[unninghame]**

The relation of leaf and other diseases of the potato to the crop. Journ. Roy. Hort. Soc. 50(1): 21-27, 1925.

**Cutler, G[arner] H[omer,] & Sandford, G[uthier] B[rown]**

Potato Diseases. Alberta Univ. Col. Agric. Field Husb. Circ. 7, 23 p., 1921.

**Dade, H. A.**

Cassava mosaic. Gold Coast Dept. of Agric. Year book 1930. Bull. 23: 245-247, 1931.

The disease was observed on *Manihot api* in 1926. It is spreading rapidly and the outlook is serious.

**Dafert, F[rantz] W[ilhelm]**

Bericht über staatliche Massnahmen anlässlich des Auftretens und der Verbreitung der Blattrollkrankheit der Kartoffel in den Jahren 1908, bis 1910. (Mitteilungen des Komitees zum Studium der Blattrollkrankheit der Kartoffel, No. 1.) Zeitschrift für das Land-wirtschaftlich Versuchswesen in Oesierreich, Jahrg. 14(5): 757-758, 1911.

**Dale, H. H.**

Introducing a discussion on the biological nature of the viruses. Brit. Ass'n. Adv. Sci. Centenary Meeting, London, Section 1, Physiology, 10 p., 1931. (Nature 128(3232): 599-602, 1931. Agric. & Live Stock, India 2(1): 66-73, 1932.)

This paper is devoted to an effort to define virus.

**Danf. A[lfonse]**

Bibliografía de los principales trabajos relativos al mosaico de la caña de azúcar que se han publicado a partir del descubrimiento de la enfermedad hasta el año 1929. (Bibliography of the leading articles related to sugar cane mosaic published from the discovery of the disease to the year 1929.) Boletín Mensual (Mexico) Oficina Federal para la Defensa Agrícola 3(5-8):186-236, 1929.

**Dana, B[liss] F.**

Mosaic and related diseases of potato and other crops. Washington Agric. Expt. Sta. Bull. 208:33-34, 1926.

Brief notes on experimental work conducted during the year in regard to virus diseases.

-----  
Diseases of vegetable and field crops (other than cereals) in the United States in 1928. U.S.D.A. Plant Disease Reporter Suppl. 68:15-109, 1929.

Mention of mosaic and curly-top of muskmelon, pumpkin, squash, and watermelon, ringspot of muskmelon, and yellows of lettuce.

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Some experiments with mechanical transmission of the curly top virus. Phytopathology (Abstract) 22(12):997-998, 1932.

The author used Sein's method with varying results.

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Curly top of vegetable investigations. Oregon State Hort. Soc. Ann. Rpt. 24:81-84, 1932.

A summary of our knowledge of the virus diseases of sugar beets, tomatoes, beans, pumpkins and squashes.

-----  
The curly-top disease of vegetables in the Pacific Northwest. Oregon Agric. Exp. Sta. Circ. Inf. 67, 4 p., 1932.

-----, & McWhorter, F. P.

Mosaic disease of horse-radish. Phytopathology (Abstract) 22(12):1000-1001, 1932.

Reports this disease which causes a dwarfing and yellowing.

**Daniel, L.**

Recherches sur la greffe des *Solanum*. (Researches on the grafting of the *Solanum*.) Comp. Rendus Acad. Sci. p., 1075, Nov. 29, 1920.

**Darlington, H[aywars] R[adcliffe]**

Yellow stripe of daffodils. Journ. Roy. Soc. (London.) **34**: 161-166, 1908.

**Darnell-Smith, G[eorge] P[ercy]**

"Bunchy top" in banana. Agric. Gaz. New South Wales **31**: 583-584, 1920.

Gives description of the disease and recommends the destroying of the diseased plants. Reports the isolation of bacteria and a *Fusarium*.

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Bunchy top in bananas. Trop. Agric. (Ceylon) **55**(6): 380-381, 1920.

Suspicion of the occurrence of bunchy top on bananas, and recommendations are made regarding measures of control.

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Bunchy top in bananas. Agric. Gaz. N. S. Wales **34**(12): 846, 1923.)

A brief note written before the cause was known.

-----, & Tryon, H.

Banana bunchy-top disease. Queensland Agricultural Journ. **19**: 33, 1923.

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Bunchy top disease in bananas. Queensland Agric. Journ. **21**(3): 169-179, 1924.

A discussion of symptoms and possible causes.

**Dastur, J[ehangir] F[ardunji]**

The mosaic disease of sugar cane in India. Agric. Journ. of India. **18**(5): 505-509. (Rev. Appl. Ent. ser. A. **11**: 543, 1923.)

A record of resistant varieties.

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A mosaic-like disease of sugar cane in the central provinces in 1926. Agric. Journ. of India. **21**(6): 429-432. (Rev. Appl. Ent. ser. A. **15**: 127. Rev. Appl. Mycol. **6**: 186, 1926.)

Report of a disease different from but similar to mosaic.

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Sugar cane mosaic. Fourth Congress Intern. Soc. Sugar Cane Technologists Puerto Rico, 1932, Bull. **24**, 4 p., 1933.

General account of sugar-cane mosaic disease as to its history, nature and behavior.

**Davidson, W. D.**

A review of literature dealing with the degeneration of varieties of the potato. Econ. Prov. Roy. Dublin Soc. **2**(21-22): 331-389, 1928.

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The rejuvenation of the champion potato. Econ. Prov. Roy. Dublin Soc. **2**(21): 319-330, 1928.

**Davis, Everett F[ogg]**

Some chemical and physiological studies on the nature and transmission of "infectious chlorosis" in variegated plants. Ann. Missouri Bot. Garden **16**(2): 145-213, 1929.

The author gives the results of extensive studies on *Euonymus* and *Abutilon*. He could not confirm the studies of Baur concerning the effects of light.

**Davis, E. W.**

Notes on collection of the sugar beet leafhopper showing the extension of its known range into British Columbia and to the coast in Washington and Oregon (*Eutettix tenella*). Journ. Econ. Ent. **20**: 581-586, 1927.

This paper gives some data on the range of this insect which is the carrier of the virus of the curly-top of sugar beet.

**Davis, J[ohn] J[une]**

Biological studies on three species of Aphididae. U. S. Dept. Agric. Bur. Ent. Tech. ser. Bull. **12**: 123-168, 1909.

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Virus and life. Nature **125**(3149): 351, 1930.

A controversial note.

**Davis, R[obert] L[esley]**

Java-Barbados hybrids in Porto Rico. Planter & Sugar Mafg. **83**(5)83-85, **100**(6): 103-104; (7): 123-125, 1929. (Rev. Appl. Mycol. **9**(2): 132, (1930).

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Mayagüez 3, 7 and 42—Three cane varieties immune to mosaic. Porto Rico Agric. Expt. Sta. Agric. Notes No. **52**, 2 p. (Mim-eograph.) 1930.

The three varieties Mayagüez 3, 7 and 42 produced from crossing POJ-2725 and SC-12(4) appeared to be resistant to mosaic.

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Report of the Plant Breeder. Porto Rico Agric. Expt. Sta. Rpt. **1931**: 13-22, 1932.

Includes a report on some sugar canes commercially resistant to mosaic.



Mayagüez 28, 49 and 63, three sugar cane varieties commercially resistant to mosaic. Agric. Notes, Porto Rico Agric. Expt. Sta. Mayagüez 61, 6 p., 1932.

A report on the behavior of these and other varieties.

Sugar cane crosses with Kassoer selfs. Trans. Fourth Intern. Soc. Sugar Cane Tech. 1932. (Facts About Sugar (Abstract.) 27(5) : 218, 1932.

Tests with crosses of Kassoer as to susceptibility to mosaic disease of sugar cane.

Sugar cane seedling mosaic elimination. Trans. Fourth Congr. Intern. Soc. Sugar Cane Tech. 1932. (Facts About Sugar (Abstract.) 27(5) : 219, 1932.

Experiments to determine the optimum spacing and planting methods for obtaining data on the reaction of sugar-cane seedling to mosaic. Under Mayagüez (Puerto Rico) conditions, it was found that mosaic will spread in 8 months for a distance of 50 feet along a single row of a susceptible variety.

Report of plant breeder. Porto Rico Agric. Expt. Sta. Ann. Rpt. 1932: 11-17, 1933.

Report of the work done during the year with mosaic-resistant seedlings.

**Davis, W[illiam] H[arold]**

Chlorotic corn. Proc. Iowa Acad. Sci. 24: 459-460, 1917.

**Decoux, L.**

La frisolée de la betterave sucriere. (The curling of the sugar beet.) La Sucriere Belge 44: 177-185, 1924.

A description of the symptoms of the disease and a discussion of quarantines.

**Deerr, Noel**

The yellow stripe cane disease. Facts About Sugar 10(10): 190-191; (11): 210-211; (12): 232-233, 1920.

**Deighton, F. C.**

Report of the Mycological Section. Ann. Rpt. Lands and Forests Dept. Sierra Leone for the 1928: 14-19, 1929. (Rev. Appl. Mycol. 9(1): 18-20, 1930.)

Contains reference to mosaic of *Manihot glaziovii* and rosette of peanuts.

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Mycological work. Sierra Leona Dept. Agric. Ann. Rpt. 1931:  
20-25, 1932.

Report on virus disease of cassava, *Locheria rosea* and *Sesamum radiatum*.

**Delacroix, Edward G[eorges]**

La Vouille Blanche du Tabac et la nielle ou maladie de la mosaïque. (The "Vouille Blanche" of tobacco and the "Nielle" or mosaic disease.) Compt. Rendue 140:678-680, 1905. (Rev. Zeithschr. f. Pflanzenkh, 16:239, 1906.)

The disease "la nielle" reported by Prillieux and Delacroix 1894, was not true mosaic but a bacterial disease (*Vouille blanche*). Believes the "pockenkrankheit" of Iwanowski and "spotting" of Sturgis may be the same as *Vouille blanche*.

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Recherches sur quelques maladies des Tabac en France. (Investigations of some tobacco diseases in France.) Ann. Inst. Nat. Agron. Paris. 2 Ser., 5:92, 1905. (Rev. Centr. Bakt. 20:193, 1905.)

**De Long, D[wight] M[oore]**

The occurrence of the beet leafhopper, *Eutettix tenella* Baker, in the Eastern U. S. Journ. Econ. Ent. 18:637-638, 1925.

An entomological record.

**Delplace, E.**

Essais de sélection en vue de parer la dégénérescence des pommes de terre faits en Loir-et-Cher de 1924 à 1928. (Tests of selection made in Loir-et-Cher in 1924 to 1928 with the view to guard against the potato degeneration.) Bull. Mens. Soc. Nat. Hort. France 5(2):287-289, 1929.

A popular paper suggesting methods of control.

**Demarre, J. B.**

Progress of pecan rosette control. Proc. 27th. Ann. Convent. Georgia-Florida Pecan Growers' Assoc. p. 38, 40, 42-43, 45, 1933. (Chem. Abstract 27(22):5880, 1933.)

The author reports his success controlling pecan rosette with applications of zinc sulphate to the soil or placed in holes in the trunks of the trees.

**Detmers, F[rederika]**

Diseases of the blackberry and raspberry. Ohio Agric. Expt. Sta. Rpt. 4:128-129, 1891.

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 Diseases of blackberry and raspberry. Conn. Agric. Expt. Sta. Rpt. 1903: 4-5, 1903.

**Dey P[romode] K[umar]**

A note on the control of sugar cane mosaic in the eastern districts. Bull. Dept. Agric. U. Prov. Agric. & Ondh. Bull. 46: 7, 1929.

**Dickson, B[ertram] T[homas]**

Some plant diseases in the greenhouse. Quebec. Soc. Protec. of Plants. Ann. Rpt. 12: 46-48, 1920.

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 A mosaic-like disease of *Cineraria*. Quebec Soc. Prot. of Plants. Ann. Rpt. 46-47, 1920.

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 Diseases of the potato: mosaic and mosaic dwarf. Sci. Agric. 2: 93-96, 1921.

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 Studies on mosaic. Phytopathology (Abstract) 11(4): 202, 1921.

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 Plant diseases of 1920-21. Quebec Soc. Prot. of Plants. Ann. Rpt. 13: 66-67, 1921.

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 Studies concerning mosaic diseases. Mc Donald College (Quebec) Tech. Bull. 2, 125 p., 1922.

A very lengthy discussion giving symptoms of several mosaic diseases, histological studies, effects of light and methods of transmission.

-----, & **McRostie, A[ordon] P[eter]**

Further studies on mosaic. Phytopathology (Abstract) 12(1): 42, 1922.

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 Plant diseases of 1921 in Quebec. Quebec Soc. Prot. Plant, Ann. Rept. (1921-22) 14: 52-58, 1922.

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 Further studies on mosaic. Phytopathology (Abstract) 12: 16, 1922.

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 Further studies on mosaic 1. Phytopathology (Abstract) 12: 42, 1922.

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Raspberry mosaic and curl. *Sci. Agric.* **3**(9): 308-310, 1923.

Gives brief history, symptoms, susceptibility and insect transmission.

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Temperature studies in mosaic disease. *Phytopathology* (Abstract) **13**(1): 42, 1923.

-----, & Hood, E. G.

Temperature studies in mosaic disease. *Phytopathology* (Abstract) **13**(1): 42, 1923.

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Studies in disease susceptibility. (Tobacco mosaic) Quebec Soc. Prot. Plant. Ann. Rpt. **1922-1923**: 15-60, 1923. (*Sci. Agric.* **3**: 307, 1923.)

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Mosaic studies IV. *Phytopathology* (Abstract.) **14**(7): 346, 1924.

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Tobacco and tomato mosaic. (1) Longevity of the virus of tobacco mosaic. *Science* **62**(1609): 298, 1925.

The juice from a mosaic tobacco plant kept in a sealed bottle for 5 years retained its vitality. The symptoms of tomato streak or stripe resulted from an inoculation with a mixture of potato and tomato mosaic juices.

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Mosaic of rhubarb. Quebec Soc. Prot. Plants. Ann. Rpt. 1924-25. **17**: 36-37, 1925.

A record of mottling and dwarfing. Inoculation experiments gave negative results.

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Virus diseases. Quebec Soc Prot. of Plants, Ann. Rpt. (1925 **26**) **18**: 10-13, 1926.

Popular.

### Dickson, Thomas

Observations on the disease in the potato generally called the curl; pointing out the most probable method of prevention; with account of the result of a few experiments made on the subject. *Memoir, Caledonia Hort. Soc.* **5**: 49-59, 18 p. 1814 (Abstract in *Stephens Book of the Farm* **5**: 203, 1847.)

**Dijk, J. van**

Verband tusschen shjmisierkte en mozaikziekte. (Relation between gumosis and mosaic.) Meded. Deli Proest. Medan, **2**, ser., No. **11**, p. 13-15, 1930.

**Dijk, M. D.**

Inloed van den rootijd van aardappels op het optreden van degeneratis-ziekten in den natelted (Influence of potato harvest time on the occurrence of degeneration diseases in the progeny.) Landb. Tijdschr. **36**: 209-223, 1924.

A discussion of the susceptibility with reference to races and environments.

**Dix, W[alter]**

(Leafroll of potato.) Fuhling's Landw. Ztg. **62**(6): 214-222, 1913.

**Dobrosky, I[rene] D[orothy]**

Is the aster yellows virus detectable in its insect vector? Phytopathology **19**(11): 1009-1015, 1929.

This paper gives a record of studies in which the results were negative.

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Cranberry false-blossom disease spread by a leafhopper. Science **70**(1826): 635, 1929.

Studies over a period of three years show that *Euscelis striatulus* is able to transmit the virus.

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Morphological and cytological studies on the salivary glands and alimentary tract of *Cicadula sexnotata* (Fallen) the carrier of aster yellows virus. Contrib. Boyce Thompson Inst. **3**(1): 39-58, 1931.

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Studies on cranberry false blossom diseases and its insect vectors. Contr. Boyce Thompson Inst. **3**(1): 59-83, 1931.

A study of the salivary glands and alimentary canal did not show any difference between healthy and disease carrying insects.

**Dobrosky, I. B.**

Insect studies in relation to cranberry false blossom disease. Amer. Canberry Growers' Ass'n. Prot. Ann. Meetg. **58**: 6-7, 10-11, 1928.

Popular.

**Dobrosky, T. L.**

(Non parasitic diseases of the potato.) Morbi Plantarum Leningrad **16**(2): 121-135, 1927.

**Doby, G[éza] K[arl] von**

Biochemische untersuchungen uber die Blattrollkrankheit der Kartoffel. (Biological studies on potato leafroll disease.) Zeitsch. fur Pflanzenk, **20**: 401-403, **21**( $\frac{1}{2}$ ): 10-17, (16): 321-336; **22**(4): 204-211; (7): 401, 403, 1912.

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Die Amylase bei den gesunden und bei den von der Blattrollkrankheit befallenen Kartoffelknollen. Kiserletügyi Közlemenyek **19**: 956-968, 1915.

-----, & **Bodnár, János**

Biochemische Untersuchungen über die Blattrollkrankheit der Kartoffel. V. Die Amylase blattrollkranker Knollen. (Biochemical investigations on the leaf-roll disease of potato. V. The amylase in leaf roll diseased tubers.) Zeitschr. Pflanzenkrankh. **25**: 4-16, 1915.

**Dodds, H. H.**

Menace of streak disease. South African Sugar Journal. **9**: 549, 1924.

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South African Sugar Association Experiment Station. South Afr. Sugar Journ. **9**: 311-313, 1925.

A comparative study of streak diseased and healthy cane. The author gives the result of experiments for the control of insects and the use of fertilizer for the control of the disease.

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Memorandum on methods of controlling streak diseases. South Afr. Sugar Journ. **9**(5): 337, 1925.

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Streak diseases in Mauritius. Disease Proved Similar to Natal. South Afr. Sugar Journ. **9**: 583, 1925.

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Treatment of streak disease: South Afr. Sugar Journ. **9**(9): 593-599, 1925.

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Acquired Resistance of POJ-213 to mosaic. South Afr. Sugar Journ. **12**(10): 627-629, 1928.

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Fongaat group members visit the Experiment Station. Afr. Sugar Journ. **14**(4): 265, 267, 269, 1930.

Streak disease of sugar-cane immunity in POJ-2714 and POJ-2725.

-----, & Fowlie, P.

Experiments to test the effects of streak disease of Uba cane. South Afr. Sugar Journ. **16**(4):231-233, 1932.

Description of experiments and results obtained.

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The origin of mosaic disease. South African Sugar Journ. **16**(11):617, 619, 1932.

The information given in this article is the result of data gathered by the author while visiting Puerto Rico to attend the International Congress of the Association of the Sugar-Cane Technologists held on February, 1932. He refers here to the mosaic of sugar cane in Puerto Rico.

-----, & Fowlie, P.

Effect of streak disease on Uba cane. South African Sugar Tech. Ass'n. Vol. 8, 1934.

Popular notes in regard to spread of the disease. Recommends to plant Co. 281, P. O. J. 2878, 2727 and 2714 canes to replace Uba on account of their resistance to streak.

Dodge, B[ernard] O[gilvie]

Notes on cucurbit mosaic. Phytopathology (Abstract) **12**:42-43, 1922.

Doolittle, S[ears] P[olydore]

A new infectious mosaic disease of cucumber. Phytopathology, (Abstract) **6**(2):145-147, 1916.

Gives a description and the results of successive inoculation experiments.

-----, & Gilbert, W[illiam] Williams

Further notes on cucumber mosaic disease. Phytopathology (Abstract) **8**(2):77-78, 1918.

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Seed transmission of cucurbit mosaic by the wild cucumber. Phytopathology (Abstract) **9**(8):326-327, 1919.

Thirteen out of 110 plants grown from seed of wild cucumber (*Micrampelis lobata*) were diseased.

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The mosaic disease of cucurbit. U. S. D. A. Dept. Bull. **879**: 69 p., 1920.

Gives symptoms, pathological anatomy, history, nature, methods of transmission, overwintering and other valuable data.

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The relation of wild host plants to the overwintering of cucurbit mosaic. Phytopathology (Abstract) **11**(1):46-47, 1921.

-----, & Walker, M[arion] N[ewman]

Notes on cucurbit mosaic. *Phytopathology* (Abstract) **12**(1): 42-43, 1922.

-----, & McKinney, H[arold] H[all]

Intracellular bodies in the phloem tissue of certain plants and their bearing on the mosaic problem. *Phytopathology*, **13** (7): 326-329, 1923.

This paper gives the results of studies on the phloem tissue of mosaic and healthy plants. The authors describe protozoa-like bodies such as were described by Strasburger for *Robinia pseudacacia*.

-----, & Walker, M[arion] N[ewman]

Cross-inoculation studies with cucurbit mosaic. *Science* n.s. **57** (1477): 477, 1923.

This paper gives the results of cross inoculation studies.

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The mosaic disease of melons and cucumber. *Iowa State Hort. Soc. Rpt.* **57**: 393-396, 1923.

Popular.

-----, & Walker, M[arion] N[ewman]

Experiments of the control of cucurbit mosaic. *Phytopathology* (Abstract) **14**(1): 56, 1924.

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Control of the cucurbit mosaic in the greenhouse. *U. S. D. A. Circ.* **321**, 5 p., 1924.

This paper gives general discussion of the disease with special attention to other host plants which carry the virus over winter.

-----, & Walker, M[arion] N[ewman]

Further studies on the overwintering and dissemination of cucurbit mosaic. *Journ. Agric. Res.* **31**(1): 1-55, 1925.

A very extensive paper giving results of cross inoculations and the study of transmission by insect vectors. Recommends removal of host plants in which the disease passes the winter.

-----, & Jones, F[red] R[emel]

The mosaic in the garden pea and other legumes. *Phytopathology* **15**(12): 763-771, 1925.

The disease occurs on *Pisum sativum* and *Lathyrus odoratus*. It can be transferred to *Trifolium pratenses* in which it probably passes the winter.

-----, & Walker, M[arion] N[ewman]

Control of cucumber mosaic by eradication of wild host plants. *U. S. D. A. Bull.* **1461**: 14 p., 1926.



This paper gives the results of a number of experiments on methods of control, including studies of the disease on other plants and also studies on transmission by insects.

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Investigations of cucumber mosaic. *Canner* **63**(18):25-27; (19):21-22, 1926.

Popular.

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Aphis transmission of cucumber mosaic. *Phytopathology* (Abstract) **18**(1):143, 1928.

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Soil transmission of tobacco mosaic and streak in the greenhouse. *Phytopathology* (Abstract) **18**(1):155, 1928.

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Greenhouse mosaic control. *Wisconsin Hort.* **20**:61-62, 1929.

Popular.

-----, & Blood, H[erbert] L[oren]

Investigation of tomato streak. *Phytopathology* (Abstract) **20**(1):134, 1930.

-----, & Sumner, C[haries] B[uchanan]

The occurrence of the Australian spotted wilt of tomatoes in Wisconsin. *Phytopathology* (Abstract) **21**(1):106, 1931.

A virus disease appeared in Wisconsin similar to spotted wilt from Australia. It is readily transmissible to tomato by artificial inoculation.

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*Commelina nudiflora*, a monocotyledonous host of celery mosaic. *Phytopathology* (Abstract) **21**(1):114, 1931.

-----, & Wellman, F. L.

*Commelina nudiflora*, a monocotyledonous host of celery mosaic in Florida. *Phytopathology* **24**(1):48-61, 1934.

General discussion of the disease which has been observed during the past four years in Florida. The disease may be transmitted mechanically and by *Aphis gossypii*. Hosts are discussed. The virus does not appear to persist in the soil nor in the seed. Eradication of *Commelina nudiflora* is recommended as control for celery mosaic under Florida conditions.

Dorst, J[acobus] C[ornelis]

Overbrenging van mozaikziekte door beschadiging of aaraking van planten. *Landbouwkd, Tijdschr.* No. **509**:512-517, 1930.

**Dosdall, Louise**

A mosaic disease of *Gladiolus*. *Phytopathology* 18(2): 215-217, 1928.

A description of the disease with evidence that it is due to a virus.

**Doty, R[alph] E[are]**

A yellow stripe disease survey. *H. S. P. A. Expt. Sta. Circ.* 35, 71 p., 1920.

**Dover, C.**

Preliminary report of the sub-station using spike-disease of Sandal. (*Santalum album* Linn.) I. An introductory survey of the problem. *Indian For. Rec. Calcutta* 17(1): 1-53, 1932.

**Doyer, Lucie C[hristine]**

lots over gozendheistvestand der zaaizden in verschillende jaren. (Notes on the state of health of seed material in different years.) *Tijdschr. over Plantenziekten* 34(4): 65-74, 1930.

Popular discussion of bean mosaic.

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Untersuchungen über den Gesundheitsszustand des Saatguts. (Investigations on the state of health of seed.) *Comp. Rend. Assoc. Internat. d'Essais de Semences* 13-13, p. 41, 1930 (English Summary.)

The author gives a scheme of classification of the various types of seed injuries, including infection by parasitic fungi and virus diseases. Important examples of each are discussed.

**Drake, C. J., Tate, H. D., & Harris, H. M.**

Preliminary experiments with Aphids as vectors of yellow dwarf. *Iowa Sta. Coll. Journ. Sci.* 63: 347-355, 1932.

A description of the methods. The vectors are bean aphid (*Aphis rumicis*), apple green aphid (*Rhopalosiphium prunifoliae*), green peach aphid (*Myzus persicae*), melon aphid (*Aphis gossypii*), potato aphid (*Macrosiphum gei*) and corn aphid (*Aphis maidis*).

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Insects as vectors of yellow dwarf of onions. *Science* n.s. 75 (1943): 341-342, 1932.

A report of recent studies on insect vectors. The disease has been transmitted by *Aphis rumicis*, *A. maidis*, *Rhopalosiphium prunifoliae* and *Cicadula sexnotata*.

-----, **Harris, H. M., & Tate, H. D.**

The relationship of aphids to the transmission of yellow dwarf of onions. *Journ. Econ. Ent.* 26(4): 841-846, 1933.

The authors found over 50 distinct species of aphids in Iowa. They found them capable of transmitting the disease during their first feeding on diseased plants and 3 or 4 days after the plant has been inoculated by the aphids it becomes a source of infection and harbours the virus. The aphid loses its virulence very quickly. A list is given of the species of aphids studied which are capable of acting as vectors of yellow dwarf in field and greenhouses.

**Dschoukowsky, E.**

Le "mosaïque" du tabac. (Tobacco mosaic.) XIV éme Congrès Intern. D' Agric. R. 13(4) : 1-2, 1929.

**Dubois, C[harles]**

Project relatif à l'organisation départementale de la sélection de la Pomme de terre par les offices départementaux de la région de l'Ouest. (Projects in relation with the departmental organization of potato selection for the offices of the department of the west region.) Off. Agric. de l'Ouest, 1921.

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Quelques conseils sur la sélection de la Pomme de terre dans la lutte contre les maladies dites de dégénérescence. (Some advices on potato selection in the fight against the so-called degeneration disease.) Off. Agric. Rég. de l'Ouest, 1921.

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La sélection de la Pomme de terre en Hollande. (Potato selection in Holland.) Off. Agric. Rég. de l'Ouest, 1921.

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La lutte contre la dégénérescence des pomme de terre dans l'Ouest de la France. (The campaign against degeneration, of potatoes in the West of France.) Rev. Bot. Appl. 2(14) : 586-589, 1922.

**Duchartre, P.**

Inoculation de la panachure par la greffe; Exposé historique. (Inoculation of mottling by grafting; historical account.) Belgian Hort. 20 : 113-118, 1870.

**Ducomet, V[ital]**

Station de physiologie et de pathologie des plantes cultivées. Semis de Pomme de terre. (Physiology and pathology station for cultivated plants. Potato seeds.) Ann. Ec. Nat. Crignon 1920-21 : 114-142, 1921.

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 De la dégénérescence des végétaux multipliés par voies asexuée.  
 (The degeneration of the plants propagated by the asexual  
 way.) Journ. Soc. Nat. d'Hort. France, Juillet, 1921.

-----  
 Observations et expériences sur les maladies de dégénérescence  
 de la Pomme de terre. (Observations and experiments on  
 degeneration diseases of the potato.) Bull. Soc. Path. Vég.  
 France 9(1) : 29-38, 1921.

      Gives the results of studies at various altitudes. Seventy varieties  
 were studied and none were free from degeneration diseases. Found  
 the leaf-roll and curly-leaf on *Solanum maglia*, *S. commersonii* and *S.*  
*calcasii*.

-----, & Foex, E[dmund] E[tienne]

Notes sur les maladies de la dégénérescence de la Pomme de  
 terre. (Notes on the degeneration of potatoes.) Rev. Bot.  
 Appl. et Agric. Col. 2 : 325-330, 1922. (Min. Agric. Ann.  
 Epiphyties 8 : 27-93, 1922.)

      The authors believe these diseases due to leaf-roll, mosaic and sim-  
 ilar diseases.

-----  
 Sur la visibilité des symptômes de la mosaïque de la Pomme  
 de terre. (Visibility of potato mosaic symptoms.) Rpt. Int.  
 Conf. Phytopath. & Econ. Entom. p., 29-43, H. Veenman &  
 Sons. Wageningen, 1923.

      A record of additional symptoms on mosaic plants.

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 Les principales maladies de la Pomme de terre. Les moyens  
 de les prévenir. La selection. Conservation des tubercules.  
 (The principal diseases of the potato: Means of preventing  
 them, selection and preservation of the tuber.) Offs. Agric.  
 p., 16, Librairie Agric. de la "Maison Rustique" Paris, 1923.

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 Dégénérescence de la Pomme de terre et degré de maturité du  
 tubercule semence. (The degeneration of potatoes and the  
 stage of maturity of the seed tuber.) Rev. Path. Vég. et Ent.  
 Agric. 11(3) : 183-188, 1924.

      Tubers that are harvested early produced plants with less leaf-roll  
 than tubers that were harvested later.

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 Dégénérescence de la Pomme de terre. (Degeneration of the  
 potato.) Ann. Econ. Nat. d'Agric. Grignon 1921-1922, 8 :  
 96-136, 1924.

Les maladies de la Pomme de terre. Caractères auxquels on les reconnaît. Moyens de les combattre et de les prévenir. (Diseases of the potato. Characters by which to recognize them. How to control and prevent them.) Librairie de la "Maison Rustique", Paris 32 p., 1925.

Nouvelles observations sur la filiosité de la Pomme de terre. (New observations on "Filiosité" of potato.) Rev. Path. Vég. et Ent. Agric. **13**:172-178, 1926.

This disease may be associated with leaf-roll or other virus diseases.

Maladies de dégénérescence de la Pomme de terre. Comptes Rendus Séances Congrès Nationale pour la lutte contre les ennemis des Cultives, tenu à Lyon en juin 1926. (Degeneration diseases of the potato. Proceedings of the National Congress for the fight against the enemies of crops, held at Lyon on June 1926.) Sev. Agric. du P.L.M., **1927**:68-82 1927.

La mosaïque de la betterave. (Mosaic of sugar beet.) Rev. Path. Vég. et Ent. Agric. **15**(1):24-29, 1928.

The author gives results in graphics and tables of an experiment with two lines of mosaic sugar beets. He reaches the conclusion that although the weight remained apparently the same in the yield there is a difference of 1 per cent in sugar content in favor of the healthy beets. 16 per cent compared to 17 per cent.

La filiosité de la Pomme de terre, maladies à crises. ("Filiosité" of the potato, an intermittent disease.) Rev. Path. Vég. et Ent. Agric. **15**(7):184-185, 1928.

Continuation of previous experiments. In this case the author started with 15 tubers of the 1924 crop. Planting year after year lead to the conclusion of intermittency. Advises roguing for control.

La mosaïque de la Betterave et la selection. (Beet mosaic and selection.) Bull. Assoc. Intern. Selectionneurs de Plantes de Grande Cult. Gembloux **2**(2):44-48, 1929. (Abstract in Resumption Genetica **4**(5):242, 1930. Rev. Appl. Mycol. **9**(10):620, 1929.

These experiments have demonstrated the possibility of transmitting beet mosaic by seeds and by infection from Aphis.

**Duffield, C[harles] W[illiam]**

Nettle-head in hops. *Ann. Appl. Biol.* **12**(4) : 536, 1925.

This disease was supposed to be due to nematodes. Cause is doubtful as some characteristics are of a virus disease.

**Dufrénoy, Jean**

Les maladies de Pomme de terre dans les Haute-Pyrénées.  
(Diseases of the potato in the High Pyrenees.) *Bull. Soc. Path. Vég. France.* **8** : 137-138, 1923.

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La transmission des maladies des plantes par voie biologique.  
(The transmission of plant diseases by biological means.)  
Report of a paper read before the Société de Pathologie comparée on the 10th of April 1923, 9 p. (*Rev. Gen. des Science* **32**(13) : 389, 1923.)

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Le tabac blanc. (White tobacco.) *Ann. Epyphites* **13** : 43-47, 1927.

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La mosaïque de la canna de sucre. (Sugar cane mosaic.) *Ann. Epyphites* **14**(1) : 25-36, (3) : 199-210, 1928.

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Introduction à l'étude cytologique des plantes affectées par des maladies à virus. *Ann. Epyphites* **14**(2) : 163-174, 1928.

The author studies the plastids and mitochondria of both fresh and fixed material of mosaic plants. The degeneration of the cell contents appeared to be analogous to that caused by certain physio-chemical agents and to certain fungi and bacteria.

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Les mosaïques du tabac. (Mosaic of tobacco.) *L'Off. Agric. Regional du Massif Centrale Bull.* **9** : 3-11, 114-125, 1928.

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Condition d'hypotomic des cellules affectées par la mosaïque.  
(Hypotomic conditions of cells affected by mosaic.) *Compt. Rend. Soc. de Biol.* **98** : (17) : 1499-1500, 1928. (*Rev. Appl. Mycol.* **7**(10) : 660, 1928.

The author found that epidermal tissue of leaf affected with mosaic disease showed vesicular alteration of the plastids and mitochondria. The staining of the vacuoles by neutral red is very irregular in the discolored areas. It was shown that cells of the mosaic tissue were in a marked hypotomic condition.

Les vacuomeres cellulaires de Canne de sucre affectees de mosaïque.  
(The vacuoles of the cells of sugar cane affected with mosaic.)  
Compt. Rend. Soc. Biol. **99**: 503-505, 1928.

Cytological studies of plant tissue affected with mosaic disease.  
Phytopathology (Abstract) **18**(1): 154, 1928.

Modifications des mitochondries et des plastides dans les cellules  
des Haricots affectees de mosaïque. (Modifications of the  
mitochondria and the plastids within the cell of the leaves of  
beans affected with mosaic.) Compt. Rend. Soc. Biol. **98**(5):  
373-374, 1928.

La mosaïque du blé, (Wheat mosaic.) Bol. R. Staz. Pat. Veg.  
Florenz, n.s. **9**(3): 298-304, 1929.

Discussion and description of the disease based on McKinney's  
studies.

Changes induced in cells of sugar cane by mosaic. Proc. Pacific  
Sci. Cong. (Java) **4**(4): 25-27, 1929.

-----, & Hédin, L[ouis]

La mosaïque des feuilles du Manioc au Cameroun. (Mosaic of  
Cassava leaves in the Cameroons.) Rev. Bot. Appl. **9**(94):  
361-365, 1929. (Rev. Appl. Mycol, **9**(1): 11, 1930.)

The disease is severe in the Cameroons and in the greater part of  
West Africa.

Les maladies à virus aux États Unis. (Virus diseases in the  
United States.) Rev. Bot. Appl. et Agric. Trop. **9**(9): 685-  
693, 1929.

Les maladies à virus chez les vegetaux. (Virus diseases of  
plants.) Rev. Path. Hyg. Gen. (366-367): 1-18, 1929.

-----, & Stamatinis, N., & Srejanni, J.

Études cytologiques sur la mosaïque du tabac. (Cytological  
studies on tobacco mosaic.) Rev. Path. Vég. et Ent. Agric.  
**16**(3): 106-117, 1929.

This paper gives the results of studies on the mitochondria, striated  
and vacuolated bodies in cells of mosaic plants.

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Les recéentes études cytologiques relatives aux maladies á virus.  
(Recent cytological studies in regard to virus diseases.) Rev.  
Path. Comp. et Hyg. Gen. **5**: 213, 229, 366-367, 1929.

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La Canne á Sucre en Florida. (Sugar cane in Florida.) Rev.  
Bot. et Agric. Trop. **9**: 34-38, 1929.

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Études cytologiques relatives aux maladies á virus. (Cyto-  
logical studies relating to virus diseases.) Phytopath.  
Zeitschr. **1**(2): 151-167, 1929. (Rev. Appl. Mycol. **9**(1): 47,  
1930.)

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La mosaïque de la Canne á Sucre. (Sugar cane mosaic.) Ann.  
Epiphyties **14**(3): 199-210, 1929. (Rev. Appl. Mycol. **9**(1):  
61, 62, 1930.)

The disease causes a modification of the vacuolar system of the  
cells and appears to prevent the mitochondria from developing into  
chloroplasts.

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Les taches du tabac. (The tobacco spots.) Bull. Off. Agric.  
Massif, Central, **10**: 121-123, 1929.

Leaf tissues may be killed by virus diseases developing white spots  
or ring spots. The living cells surrounding these spots show a degen-  
eration of the chloroplasts, plastids and cytoplasm.

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Étude cytologique des taches blanches du tabac. (Cytological  
study on the white spots of tobacco.) Rev. Path. Vég. Ent.  
Agric. **16**(4-5): 146-159, 1929.

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The changes induced in the cytoplasmic structure of cells by  
virus diseases. Fifth Int. Bot. Congr. Cambridge, **1930**: 367-  
368, 1930.

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Les maladies á virus chez les plantes. (Virus diseases of plants.)  
Rev. Gén. Sci. **41**(8): 237-243, 1930.

A discussion of the desintegration of the plastids. The starch is  
translocated and the plastids appear as vesiculated bodies.

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Études cytologiques relatives aux maladies á virus. (Cyto-  
logical studies in relation with virus diseases.) Phytopath.  
Ztschr. **2**(1): 151, 1930.



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Les maladies á virus au Congr s de Botanique de Cambridge.  
(The virus diseases in the Botanical Congress at Cambridge.)  
Rev. Path. Compt. (Paris) 12 p., 1930.

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Maladies á virus du Tabac. (Virus disease of tobacco.) Phy-  
topath. Ztschr. 2: 321-340, 1930.

A description of the contents of cells from healthy and virus to-  
bacco as seen under the ultramicroscope.

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Les mosa ques des plantes tropicales et subtropicales de l'Ouest  
Africain. (The mosaic of tropical and subtropical plants of  
West Africa.) Rev. Bot. Appl. & Agric. Col. 10(107): 568-  
571, 1930.

Notes on manihot, tobacco, peanuts and capsicum virus diseases.

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Les modifications pathologiques de structure des cellules v g -  
tales. (The pathological modification of the vegetable cell  
structure.) Ann. Inst. Nat. Agric. 2 ser. 23: 1-104, 1930.

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La modification locale du cytoplasme des cellules v g tales af-  
fect es par des virus. (Local modification of the cytoplasm  
of vegetable cells affected with mosaic.) Compt. Rend. Soc.  
Biol. (Paris). 107(21): 868-870, 1931.

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La r tention de l'eau par la cellule v g tale: maladies d'hypo-  
tonie et maladies d'hypertonie. Rev. Path. Compt. et Hyg.  
G n. 31: 212-223, 1931.

A study in physiology. Mosaic inhibits photosynthesis and the  
sugar content is low. Other diseases cause carbohydrates to be stored.

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Mosa que des tulips. (Mosaic of tulips.) Compt. Rend. Soc.  
de Biol. 108(27): 51-53, 1931.

The author described a mosaic in France which is similar to "break-  
ing" in England.

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Cytologie des cellules de plantes affect es par des maladies á  
virus et de plantes carenc es. (Cytology of the cells of plants  
affected and not affected with virus diseases.) Second In-  
tern. Cong. Path. Compt. (Paris) 1: 309, 1931.

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Deuxième congrès de pathologie comparée. Second Intern. Congress of comparative pathology.) (Paris) Oct. 14-18, 1931. *Phytopath. Ztschr.* 4: 455-459, 1932.

Discussion of virus diseases.

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Die viruskrankheiten. (The virus diseases.) *Phytopath. Ztschr.* 5(1): 75-83, 1932.

A study of the effects of mosaic of the chondriome. The author used Borrel's supercolation technique for the study of epidermal cells.

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Die viruskrankheiten. (The virus diseases.) *Phytopath. Ztschr.* 5(1): 85-90, 1932.

He reports clear breaking and selfbreak. Transmitted by *Myzus persicae* and *Macrosiphum gei*.

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Differentiation of green and yellow mosaic virus in tobacco. *Phytopathology (Abstract)* 23(1): 10, 1933.

**Duggar, B[enjamin] M[inge], & Karrer J[oanne] L[aura] \***

The size of the infective particles in mosaic disease of tobacco. *Ann. Missouri Bot. Garden* 8(2): 343-355, 1921.

Gives the results of experiments with filters which indicate the possibility of a minute organism.

-----, & **Armstrong, J[oanne] K[arrer] \***

Indications respecting the nature of the infective particles in the mosaic disease of tobacco. *Ann. Missouri Bot. Garden*, 10(3): 191-212, 1923.

After a general discussion of the subject, the authors give a review of enzyme, bacterial and protozoa theories. This is followed by a very excellent discussion of the nature of the causal agent.

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The effect of treating the virus of tobacco mosaic with the juices of various plants. *Ann. Missouri Bot. Garden* 12(4): 359-366, 1925.

The authors give the results of mixing the juice from tobacco mosaic plants with the juice of other plants and pokeweed juice on *Bacterium prodigiosum*.

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Effects of certain organic substances on the virus of the typical tobacco mosaic. *Amer. Journ. Bot. (Abstract)* 16(10): 845, 1929.

\* Her papers have appeared under these two different names.

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The nature of mosaic diseases. Proc. Intern. Congr. Plants Sci. Ithaca, New York. **2**:1231-1242, 1929.

The author reports the results of grinding and filtration experiments and says,—“I am forced to the conclusion that the infectious agency is a particle of almost inconceivably small size, certainly too small to represent an organism with the usual characteristics.

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Some significant properties of the virus of typical tobacco mosaic Science (Abstract) **69**(1795):555, 1929.

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The problem of seed transmission of the typical mosaic plant. Journ. of Bact. 19(1):20, 1930. (Rev. Appl. Mycol. 9:413, 1930. Phytopathology (Abstract) **20**:133, 1930.

The results of experiments with protein and other complex substances which may be involved in the absorption of mosaic virus of tobacco. A considerable variety of seeds were used in this work. The author calls attention to the probability of some relationship of transmission of the virus to absorption and its inactivation by stored proteins.

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Standardization technique in certain studies. Phytopathology (Abstract) **20**(1):141, 1930.

-----, & Hollaender, A.

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Ultra violet radiation. Science n.s. (Abstract) Suppl. **72**(1988):26, 1933.

The authors report that mosaic virus was found to resist up to 150 times the amount sufficient to kill one of the bacterial species.

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Standardization and relative purification technique with plant virus preparations. Proc. Soc. Exper. Biol. & Med. **30**(8):1104-1109, 1933.

The author describes his tentative standard method for the relative purification of the tobacco mosaic virus.

-----, & Johnson, Burt

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Stomatal infection with the virus of typical tobacco mosaic. Phytopathology **23**(12):934-948, 1933.

In this paper there is presented a discussion of the technique of spraying tobacco leaves with a virus suspension in the effort to determine whether or not stomatal infection may occur.

-----, & Hollaender, A.

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Irradiation of plant viruses and of microorganisms with monochromatic light. I-II. Journ. Bact. **27**:219-239, 241-256, 1934.

**Dunlap, A[lbert] A[tkinson]**

The chlorophyll content of normal and mosaic leaves of tobacco. Amer. Journ. Bot. (Abstract) 15(10) : 622, 1928.

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Effects of mosaic upon the chlorophyll content of tobacco. Phytopathology 18(8) : 697-700, 1928.

Diseased plants contain less chlorophyll than normal plants.

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Changes in total nitrogen, total carbohydrates, and carbon dioxide production in leaf tissue, caused by virus diseases. Amer. Journ. Bot. (Abstract) 16(10) : 844-845, 1929.

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The total nitrogen and carbohydrates, and the relative rates of respiration in virus-infected plants. Amer. Journ. Bot. 17(5) : 348-357, 1930.

These experiments showed an increase in nitrogen and a decrease in carbohydrates in the foliage of mosaic plants, and the reverse in peach yellows.

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The carbohydrates of healthy and mosaic tobacco leaves. Amer. Journ. Bot. (Abstract) 17(1047), 1930.

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Carbohydrate variations accompanying the mosaic disease of tobacco. Amer. Journ. Bot. 18(5) : 328-356, 1931.

Tobacco mosaic diseased plants showed a reduction in the amounts of reducing sugars, disacharids, dextrin, starch and pentosans. The starch appeared to be converted into simpler compounds. Sugars accumulated to greater degree in mosaic plants.

**Duriez, C.**

A propos des maladies de dégénérescence de la pomme de terre. (In regard to potato degeneration diseases.) Rev. Hort. 49(14) : 367-368, 1927.

**Durrel, L[aurance] W[ood]**

Notes on early dwarf symptoms on Irish potatoes. Phytopathology (Abstract) 7(1) : 71, 1917.

**Dvorak, M[ayne]**

The effect of mosaic on the globulin of potato. Journ. of Infect. Diseases. 41(3) : 215-221, 1927.

The author concludes that the disease has had an influence on the precipitation of the globulin.

**Dyckerhoff, F.**

Infektionsversuche mit der Rubenblattwouze (*Piasma quadrata*)  
au Zukerrubenkeimlingen im Jahre. Auzeig. Schadlingskunde  
3: 78-84, 1927.

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Bemerkunde zu dem Aufsatz von K. Boning: Ist die durch  
die Blattwauze hervorgerufene Erkrankung der Rube eine  
Viruskrankheit? Auzeig. Schadlingskunde 4: 17-18, 1928.

**Dykstra, T[heodore] P[eter]**

Leafroll transmission from potato to other solanaceous plants  
by means of *Myzus persicae*. Phytopathology 20(10): 853,  
1930.

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Weeds as possible carriers of leaf roll and rugose mosaic of  
potato. Journ. Agric. Res. 47(1): 17-32, 1933.

Report of experiments in transmission of leaf-roll and rugose mo-  
saic of potatoes to solanaceous weeds.

The author concludes that the investigations have established that  
under certain conditions solanaceous weeds growing in proximity to  
potatoes may become infected with certain virus diseases of the crop,  
and may serve as sources of the infection in the crop.

**Earle, F[ranklin] S[umner]**

Health and disease plants. Journ. N. Y. Bot. Gard. 3: 195-202.  
1902.

A popular paper in which the author refers to peach yellows, to-  
bacco mosaic, etc.

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Instrucciones para la eradicación de la enfermedad de la caña.  
(Instructions for the sugar cane disease eradication.) Ins.  
Expt. Sta. Porto Rico Circ. 14: 6-8. 1918.

Recommends the planting of healthy canes and roguing.

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Informe leído ante la Asociación de Productores de Azúcar de  
Puerto Rico. (Report read before the Sugar Producers' As-  
sociation of Porto Rico.) Rev. Agric. Puerto Rico 2(1):  
5-10, 1918.

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Eradication as means of control in sugar cane mosaic or yellow  
stripe. Ins. Expt. Sta. Porto Rico Bull. 22, 17 p., 1919.

Gives the results of field studies on distribution and methods of  
control and also of experiments to determine methods of transmission.

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The Year's experience with sugar cane mosaic or yellow stripe disease. Journ. Dept. Agric. Porto Rico **3**(4):3-33, 1919.  
Gives the results of field studies for control.

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The resistance of cane varieties to the yellow stripe disease. Ins. Expt. Sta. Porto Rico Búll. **19**, 19 p., 1919.  
Field studies to determine relative resistance and susceptibility.

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The yellow stripe or sugar cane disease. Ins. Expt. Sta. Porto Rico Ann. Rept. **1918-19**:18, 1919.

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Instrucciones para la eradicación de la enfermedad del mosaico de la caña. (Instructions for sugar cane mosaic disease eradication.) Sugar **21**:51-52, 1919.  
A brief popular discussion.

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Carta Circular No. 4. (Circular Letter No. 4.) Rev. Agric. Puerto Rico **3**(1):51-52, 1919.

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The mosaic or new sugar cane disease. Louisiana Planter & Sugar Manuf. **63**:167, 1919.

The author criticised Mr. R. M. Gray's article (Louisiana Planter & Sugar Manuf. **63**:90) and declares that a stalk of cane once infested never recovers. Also states that Grey probably confused mosaic with other sugar-cane diseases.

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El mosaico de la caña o matizado. El estado actual de la epidemia. (Sugar cane mosaic disease or mottling. The actual stage of the epidemic.) Ins. Expt. Sta. Porto Rico Circ. **22**, 8 p. 1920.

Review of the work done in the Island to eradicate the disease.

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La extirpación del mosaico (Mosaic eradication.) Sugar **23**:114-115, 1921.

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Importantísima carta (Very important letter.) Cuba Rev. Agric. Com. & Trab. **1**(4):68-70, 1921.

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Annual Report of the expert in sugar cane disease, 1920-21. Ins. Expt. Sta. Porto Rico Ann. Rpt. **1920-21**:59-62, 1921.

Experiences with mosaic disease. Uba found to be immune in Cuba. *South African Sugar Journ.* 7(5) : 427-428, 1923. (Rev. *Appl. Mycol.* 2 : 525-526, 1923.)

In a report of the spread of the disease and on the immunity of some varieties.

Mosaic disease danger. Prompt action needed to stop its spread in Cuba. *Facts About Sugar* 16 : 230-231, 1923.

The disease is spreading rapidly in Cuba and very little is being done to control it.

Mosaic eradication urged. (Urge la extirpación del matizado.) *Facts About Sugar* 19(11) : 253, 1923 (Rev. *Agric. Porto Rico* 13(4) : 249-250. *Australian Sugar Journ.* 16(3) : 615-616, 1925.)

Sugar cane mosaic and sugar cane chlorosis. *Facts About Sugar.* 19(16) : 372, 1924.

A discussion of the characters of true mosaic and chlorosis.

Kavangerie in Porto Rico. (A reply to D. W. May.) *Facts About Sugar* 21 : 925-927, 1926.

Controversy.

*Sugar Cane and Its Culture VII* & 355 p., 24 figs. New York. (Mosaic p. 110-124), 1928.

**East, E[dward] M[urray], & Weston, Jr. W[illiam] H[enry]**

A report on the sugar mosaic situation in February, 1924, at Soledad, Cuba. *Harvard Inst. Trop. Biol. & Med., Contrib.* 1, 52 p. 1925. (Rev. *Appl. Mycol.* 5(10) : 582-583. 1926.)

A statement of the purpose of this Journal and a discussion of the mosaic at Soledad, Cuba.

Immunity to sugar cane mosaic acquired by the host. *Proc. Nat. Acad. Sci.* 17(6) : 331-334, 1931. (*Sugar News* 12(11) : 795-796, 1931.)

The author uses precipitin experiments according to the Uhlenhuth method. The tests not conclusive but are suggestive.

**Eastham, J[ohn] W[illiam]**

Some potato disease problems in British Columbia. *Sci. Agric.* 4(3) : 89-94, 1923.

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Plant disease survey of central British Columbia. *Agric. Journ. British Columbia* 9(10):224-225, 233, 1923.

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Report of Provincial Plant Pathologist, Vancouver. *British Columbia Dept. Agric. Ann. Rpt.* 1929. 24:135-139, 1930.  
Infectious chlorosis of roses; a record of this disease.

**Eastwood, H. W.**

Bunchy top control. Early identification, eradication of infective aphids, and destruction of diseased stools. *Agric. Gaz. New South Wales* 44(8):611-614, 1933.

Recommendations of practical methods for the control of bunchy-top in bananas under New South Wales conditions.

**Eberhardt, & Chevalier**

Un nouveau traitement pur les maladies de la Pomme de terre. (A new treatment for the potato diseases.) *Rev. Hort. Algérie* 30(9):200-202, 1926.

**Eckerson, S[ophia] H[ennion]**

An organism of tomato mosaic. *Bot. Gaz.* 81(2):204-209, 1926. (Contr. Boyce Thompson Inst. Plant Res. 1:109-114.)

The author found flagellate organisms causing the destruction of chloroplasts in mosaic tomatoes.

-----, & **Kraybill, H[enry] R[eist]**

Separation of fern leaf from mottling in tomato mosaic. *Phytopathology (Abstract)* 17(1):57-58, 1927.

**Edgerton, C[laude] W[ilbur], et al**

The mosaic disease. *Louisiana planter & Sugar Manuf.* 63:253-255, 350, 1919.

Stenographic report of a meeting of the Louisiana State Sugar Planters' Association on the mosaic disease of sugar cane.

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Mosaic or mottling disease of sugar cane. *Louisiana Agric. Expt. Sta. Div. Agric. Expt. Circ.* 32, 6 p., 1919. (*Louisiana Planter Sugar Manuf.* 62(25):397, 1919).

Popular discussion. The presence of sugar-cane mosaic disease is reported. Similar or probably identical to that disease in Puerto Rico.

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A method of selecting L-511 cane free from mosaic disease for planting purposes. *Louisiana Agric. Expt. Sta. Bull.* 176, 7 p., 1920. (*Louisiana Planter & Sugar Manuf.* 65 (16):252-253, 1920.)

The character of this paper is indicated by the title.



-----, & Moreland, C[layton] C[apers]

Sugar cane diseases. Louisiana Agric. Expt. Sta. Ann. Rpt. 1920:16-17, 1920.

-----, & Tiebout, G[eorge] L[eroy]

Mosaic disease of the Irish potato and the use of certified seed. Louisiana Agric. Expt. Sta. Bull. 181, 15 p., 1921.

Describes the disease and gives the results of field tests with certified seed, effects on yield, and influence of climate.

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Loss from mosaic. Louisiana Planter & Sugar Manuf. 71:30, 1923.

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Department of Plant Pathology. Louisiana Agric. Expt. Sta. Ann. Rpt. 1922. 34:17-18, 1923.

-----, & Taggart, W[illiam] G.

Tolerance and resistance to the sugar cane mosaic. Journ. Agric. Res. 29(10):501-506, 1924. (Louisiana Planter & Sugar Manuf. 74:188-190, 1925. Rev. Appl. Mycol. 4:379, 1925.. Int. Sugar Journ. 27(321):482-483. 1925.)

The disease spreads rapidly in Louisiana and roguing has not been successful. The results of tests with tolerant varieties are given.

-----, -----, & Tims, E[ugene] C[hapel]

The sugar cane disease situation in 1923 and 1924. Louisiana Agric. Expt. Sta. Bull. 191, 44 p., 1924 (Louisiana Planter & Sugar Manuf. 74(5):88-90, (6):110-112, (7):130-132, 1925. Rev. Appl. Mycol. 4:312-313, 1925.)

Gives the results of experimental work to determine resistance and tolerance.

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Selecting for resistance to the sugar cane mosaic. Phytopathology (Abstract) 15(1):45-46, 1925.

-----, Taggart, W[illiam] G., & Tims, E[ugene] C[hapel]

The selection of cane seed. Louisiana Agric. Expt. Sta. Bull. 195, 18 p., 1926 (Manila Daily Bull. 67(62):15, 1926).

This paper gives the results of experiments; were very suggestive and encouraging.

-----, & Tims, E[ugene] C[hapel]

Investigations on the sugar cane disease situation in 1925-26. Louisiana Agric. Expt. Sta. Bull. 197:3-7, 1927. (Rev. Appl. Mycol. 6:641-642, 1927).

The writers report obtaining varieties resistant to mosaic by selection of seed cuttings.

-----  
 Disease resistant of P.O.J. 213 Cane. Sugar Bull. Nov. 15, 1928. (Facts About Sugar 23(50):1190, 1928. Rev. Appl. Mycol. 8:264-265, 1928.)

A study of important varieties with reference to disease resistance.

-----, Tims, E[ugene] C[hapel] & Mil, P[ercy] J[oseph]  
 Plant Pathology. Louisiana Agric. Expt. Sta. Ann. Rept. 1928-29:52-57, 1930.

Several years' investigations of the authors showed the tolerance to mosaic disease by certain strains of sugar cane.

**Egiz, S[amuel] A.**

Tabakovodstvo. Glavoe Upravlenie Zemledieüa i Zemlenstroistva. Department Zemledielüa, Obshchchedostynnica Sorvschenüa sel'skikh khoziaistvennykh Uchezhdnü i Spetsialistov po Sel' Skokhoziaistvennoi chastii (Russia), No. 9, 1912.

**Elliott, J[ohn] A[sbury]**

A mosaic of sweet and red clover. Phytopathology 11(3):146-148, 1921.

The disease is the same as the mosaic of sweet clover (*Melilotus alba*), reported November 1920. Can be transmitted by cross-inoculation to *Vicia faba* and *Medicago arabica*.

**Elmer, Otto H[erman]**

Mosaic cross-inoculation studies. Iowa Acad. Sci. Proc. 29:205-206, 1922.

Very brief preliminary paper.

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 Mosaic cross-inoculation and insect transmission studies. Science n. s. 56(1448):370-372, 1922.

A preliminary paper. Iowa Agric. Expt. Sta. Res. Bull. 82 (1925).

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 Studies of insect transmission and cross-inoculation of mosaic on the *Solanaceae*, *Cucurbitaceae* and *Leguminosae*. Iowa Acad. Sci. Proc. 29:311-312, 1922.

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 Mosaic cross-inoculation studies. Phytopathology (Abstract) 14(1):55, 1924.

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 Transmissibility and pathological effect of the mosaic disease. Iowa Agric. Expt. Sta. Res. Bull. 82:39-91, 1925. (Rev. Appl. Ent. ser. A 13:563, 1926.)

This paper gives the results of a large number of cross-inoculation experiments. Also a considerable amount of data concerning insect vectors.

Inhibition of mosaic infection. *Phytopathology* (Abstract) **16** (1): 67-68, 1926.

A mosaic resistant variety of cucumber. *Phytopathology* (Abstract) **17**(1): 48, 1927. (*Trop. Agric. (Trinidad)* **4**: 135, 1927.)

**Elze, D[avid] L[eon]**

(Insect transmission of curl disease of potato.) *Int. Conf. Phytopath. & Econ. Ent. Ann. Rpt.* p. 35. H. Venman & Sons. Wageningen, 1923.

De verspreiding van virusziekte nvan de Aardappel (*Solanum tuberosum*) door insects. (Transmission of virus disease of potato by insects.) *Ins. voor. Phytopath. Lab. voor Mycol. en Aardappelonderzoch. Meded.* **32**: 90, 1927. (With English summary. (*Meded. Landbouwhoogschool Wageningen* **31**(1): 1-90, 1927.)

A classification of virus diseases with reference to insect carriers. List of insects and the results of transmission experiments.

....., & **Quanjer, H[endrick] M[arius]**  
Phloemnecrose en netnecrose van de aardappel in America en Europa. (Phloemnecrosis and netnecrosis of the potato in America and Europe). Overgedrukt nit de Mededeelingen van de Landbouwhoogeschool. Deel **33**(8): 1-10, 1929. (*Rev. Appl. Mycol.* **9**: 47, 1930.)

The author made a comparative study of European and American potatoes with these diseases and gives a discussion of differences. He believes the leaf-roll on the two sides of the Atlantic to be the same.

Die Ubertragbarkekit mit dem Samen von aukuba-Mosaik sowie blattroll. (Phloemnekrose) der kartoffel. (The transmissibility by the seed of aucuba mosaic and leaf roll. (phloemnecrosis) of the potato.) *Phytopath. Zeitschr.* **3**(4): 449-457, 1931.

The author gives the results of experiments in which he transmitted these two diseases by the seeds and by grafting.

De overgang van virusziekten met het zaad, in het bijzonder

bijode aardappel. (The transmission of virus diseases through the seed, particularly in the potato plant.) Voor- dracht gehouden voor de Nederlandsch Planenzietekundige (Phytologische) Vereenigen op de Landbouweek te Wagen- ingen op den 24 sten Juli 1931.) Tijdsch. Plantenziekt **37** (10) : 189-199, 1931.

The author gives a review of the literature and the results of graft- ing aucuba mosaic, leaf-roll and healthy potatoes. Some of the plants contracted the diseases.

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The relation between insect and virus as shown in potato leaf roll, and a classification of viroses based on this relation. *Phytopathology* **21**(6) : 675-686, 1931.

A discussion on the ability of several insects to transmit potato leaf-roll. Gives a classification based on relation of virus diseases to insects.

**Emmerez de Charmoy, D[onald] d'**

Mode de transmission de la mosaïque de la canne á sucre. (Mode of transmission of sugar cane mosaic.) *Rev. Agric. Ile Maurice* **12** : 240-341, 1923.

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Mauritius: Die Mosaikkrankheit des tabaks. (Mauritius: The mosaic disease of tobacco.) *Inst. Landw. Rundschau. Rom.* **19** : 775, 1928.

-----, & Guézé, P.

Situation actuelle de la mosaïque á la Réunion. (Present situa- tion of mosaic in Reunion.) *Rev. Bot. Appl. & Agric. Trop.* **13**(143) : 495-499, 1933.

Suggestions and description of suitable legislation tending to erad- icate sugar-cane mosaic disease from Reunion.

**Ensign, M[artin] R[ussell]**

Sweet potato mosaic. *Phytopathology* **9**(4) : 180-181. 1919.

The author describes the symptoms of the disease and compares yields with healthy plants and states that there is no evidence that it is transmitted directly to neighboring plants.

**Eristavi, E. M., & Mordvintzeff, A. I.**

A brief survey of plant diseases in Abkhasia in 1929. (English Summary) *Abkhasia Agric. Expt. Sta. Sukhum* **41**, 20 p., 1930.

Brief notes on tomato mosaic and white leaf spot reported as virus disease.

**Esau, Katherine**

Studies of the breeding of sugar beets for resistance to curly-top. *Hilgardia* **4**(14): 415-441, 1930.

The author gives a brief statement concerning the disease in the United States and experimental evidence with hybrids which indicate that it is possible to develop resistant varieties.

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 Sugar beet resistant to curly-top. *Facts About Sugar* **25**: 610-612, 1930.

-----  
 Pathologic changes in the anatomy of leaves of the sugar beet, *Beta vulgaris*, affected by the curly-top disease. *Phytopathology* **23**(9): 679-712, 1933.

An extensive account of the writer's studies on the subject at the California College of Agriculture. She states that curly-top induces pronounced anatomical changes in affected leaves involving hypertrophy, hyperplasia, hypoplasia and necrosis. She explains and describes these disorders.

-----  
 Cell degeneration in relation to sieve-tube differentiation in curly-top beets. Preliminary note. *Phytopathology* **24**(3): 303-305, 1934.

Brief preliminary notes of cytological studies made by the author.

**Esmarch, F[erdinand]**

Zur kenntnis des stoffwechsels in blattrollkanken Kartoffeln. (Studies on the metabolism in potato leafroll disease.) *Zeitschr. Pflanzenkr.* **29**: 1-20, 1919. (*Ang. Bot.* 1:125, 1919.)

Anatomical studies of leaf-roll. The author agrees with Quanjer in regard to the translocation of starch and concludes that rolling of the leaves occurs as a consequence of the disturbed metabolism present internally. He doubts however, that Quanjer's phloem necrosis may be regarded as cause of the reduced translocation of starch.

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 Beiträge zur Anatomie der gesunden und Kranken Kartoffelpflanze. *Anatomie der vegetativen Organ.* (Contribution to the anatomy of the normal and diseased potato plant. *Anatomy of vegetative organs.*) *Landw. Jahrb.* **54**: 161-266, 1919.

The author gives the results of extensive studies. He states that phloem of mature plants is always necrotic. Therefore, the phloem necrosis theory is obsolete.

-----  
 Die phloemnecrose der Kartoffel. (Phloem necrosis of the potato) *Ber. Deutsch. Bot. Ges.* **37**: 463-470. 1919.

Phloem-necrosis is found in both healthy and diseased plants, especially mature parts. When present in young plants it is evidence of premature ripening. It is of no value in diagnosing leaf-roll.

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Neues von der Blattrollkrankheit der Kartoffel. (News of the leafroll disease of potato.) Naturwiss. Wochenschr. N. F. 18: 594-595, 1919.

-----  
Neuere Anschauungen über die Blattrollkrankheit der Kartoffeln. (New contemplation about the leaf-roll disease of the potato). Kartoffelzeitg. 13(16). 1923. (Nachrichtenbl. Pflanzenschutzdienst 3(4): 25-26, 1923.)

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Blattrollkrankheit oder nicht? (Leaf-roll disease or not?) Sächs. Landw. Zeitschr. 74: 543-545. 1926.

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Das Blattrollen der Kartoffel. (The leaf rolling of the potato.) Die Kranke Pflanze 3: 143-146, 1926.

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Die Blattrollkrankheit der Kartoffel. (The leaf roll disease of the potato.) Monographien Zum Pflanzenschutz, 8, 91 p., 1932.

This paper includes history, geographical distribution, economic importance, histology, physiology, transmission, environmental factors and control. The author believes the causal agent is a living entity.

Euler, [Chelpin] Hans [Karl August Simon] von, Hertzsch, W[alter Myrback] S., Runehjelm, D[agmar Elisabet] & Forssberg, A[rne Gunnar]

(Chemical changes in infectious chlorosis in leaves of *Abutilon*.) Arkiv. Kemi Mineral Geol. 10B(13): 1-6, 1930. (Chemical Abstracts 25(7): 1554. 1931.)

*Abutilon* leaves affected with infectious chlorosis are stated to be characterized by a much lower catalase activity, a higher proportion of amino nitrogen, less chlorophyll, xanthophyll and carotin, and less tryptophane than the normal green areas.

-----  
Recherches chimiques sur l'action de deux virus des végétaux. (Chemical investigations on the action of two viruses of plants.) Second Intern. Congr. Comp. Path. Comp. Rend. Communications 2: 459-461. 1931.

Comparative biochemical studies on tobacco plants suffering from mosaic, *Abutilon striatum* with infectious chlorosis and healthy plants.

-----, & Moritz, O.

Chemische Beiträge zur Kenntnis der chlorophydefekte. (Chemical contribution to the study of chlorophyll deficiency.) Ark. Kemi Mineral. Geol. Stockholm 10: A 1-15, 1931.

-----, et al

Vergleichende Versuch über verschiedene Arten von Chlorophylldekten. Zeitschr. Indust. Abstamm. u. Vererbungsl. 60: 1-15, 1931.

**Evans, I[llyd] B[uller] Pole**

Report No. VI, Botany and Plant Pathology. Journ. Agric. Dept. South Africa 9(6): 542-546, 1924. (Rev. Appl. Mycol. 4: 332-333, 1925.)

Contains references to rosette of peanuts and mosaic and streak of sugar cane.

**Evans, Paul**

Peach rosette. Missouri State Fruit Expt. Sta. Bull. 11, 1904.  
A popular paper describing the disease.

**Eyer, J. R., & Crawford, R[aymond] F[rank]**

Observations on the feeding habits of the potato psyllid (*Paratrioza cockerelli* Sulc.) and the pathological history of the "psyllid yellows" which it produces. Journ. Econ. Ent. 26 (4): 846-850, 1933.

Description of the symptoms of psyllid yellows. Account of the authors' studies on the mode of feeding of the insect vector of the disease, *Paratrioza cockerelli*.

**Eyles, F.**

Tobacco mosaic in Southern Rhodesia. Selection for resistance. Rhodesia Agric. Journ. 23(3): 248-252, 1926.  
A popular discussion.

**Faes, H[enry]**

Le portegreffes resistant á la chlorose. (Stocks resistant to chlorosis.) Prog. Agric. et Vitie 83: 83-85, 1925.

**Fajardo, T[ranquilino] G[anzón]**

Progress in the experimental work with the transmission of bean mosaic. Phytopathology (Abstract) 18(1): 155, 1928.

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Studies on the mosaic disease of the bean (*Phaseolus vulgaris* L.) Phytopathology 20(6): 469-494, 1930.

There appears to be but one mosaic disease of the bean. It develops best at 20 to 28 degrees C., is partly masked at 28 to 32 de-

greens and completely masked at 12 to 18 degrees. The virus exists in all aerial parts of the plant and is transmitted in some seeds. It is also transmitted by *Aphis rumicis*, *Myzus persicae*, *Macrosiphum solanifolii* and a mealy bug.

-----  
Studies of the properties of the bean mosaic virus. *Phytopathology* 20(11) : 883-888, 1930.

The author continues his previous work. He compares the bean mosaic with other plant mosaic viruses and other mosaic types.

-----, & **Marañón, G.**

The mosaic disease of Sinamar, *Pachyrhizus erosus*. *Urban, Phil. Journ. of Sci.* 48(2) : 129-142, 1932.

The authors describe a disease of sincamas,—*Pachyrhizus erosus* (*P. angulatus*).

**Fallada, O.**

(Diseases of sugar beets) *Osterr. Unger. Ztschr. Zuckerindus. u. Landw.* 39(1) : 42-48, 1910.

**Faris, J[ames] A[braham]**

El mosaico de la caña de azúcar. *Historia de esta enfermedad en la caña Dominicana. (Sugar cane mosaic. History of this disease in the Dominican cane.) Rev. Agric. Santo Domingo* 17 : 73-76, 90-95, 105-108, 1922. (*Rev. Appl. Mycol.* 3 : 437, 1923.)

A popular discussion of the disease and suggestions for the use of resistant varieties for control.

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*Proc. 2nd. Int. Conf. of sugar Cane Technologists, Havana* p. 99-100, 1927.

-----  
Field control of sugar mosaic in Cuba. *The Reference Book of the Sugar Industry of the World.* 7 : 32-35. 1929.

A popular discussion with a great deal of field data concerning Cuban conditions.

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Some pathological effects of the mosaic disease of sugar cane. *Planter & Sugar Manuf.* 82(21) : 404-405, 1929.

-----  
El dominio del mosaico de la caña de azúcar en el campo cubano. (The range of mosaic of sugar cane in cuban plantations.) *Bol. Unión Panamericana* 64(9) : 968-983, 1930.

The author gives three marked zones that occur in Cuba in regard to the degree of spread of the disease. Gives the varieties best adapted to each zone and in each season.



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The utilization of varieties in the field control of sugar cane mosaic and root disease in Cuba. (A preliminary report) Trop. Plant Res. Foundation Scient. Contr. **20**, 69 p., 1931.

The author gives a large amount of data demonstrating that the use of resistant varieties is the most satisfactory method for the control of these diseases.

**Farquharson, C. O.**

Reports of the Mycologist. Nigeria Dept. Agric. **1912-1913**. 1913.

Record and description of a disease on cotton (*Gossypium peruvianum* and *G. vitifolium*) which the author names "Leaf curl" and has all the characteristics of a virus disease.

**Fawcett, G[eorge] L[orenzo]**

Una enfermedad de la caña producida por condiciones desfavorables de clima y suelo. (A sugar cane disease caused by unfavorable climatic and soil conditions.) Rev. Indus. Agric. Tucumán **8**: 136-140, 1917.

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La enfermedad de las rayas amarillas de la caña. (Yellow stripe disease of sugar cane.) Rev. Indus. Agric. Tucumán **10**: 46-48, 1919.

The disease is widely distributed on the Java varieties. Kavangerie is immune and D-1135 is resistant.

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Notas sobre la extirpación del mosaico de la caña. (Notes on sugar cane mosaic eradication.) Rev. Indus. Agric. Tucumán **11**: 74-76, 1920.

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The yellow stripe or mosaic disease in Argentina. Louisiana Planter & Sugar Manuf. **64**: 41, 1920.

Reports the disease as having been in Argentina for 15 years or more. It is abundant but not serious.

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Las primeras investigaciones sobre el mosaico en Java. (The first investigations on mosaic disease in Java.) Rev. Indus. Agric. Tucumán **11**: 121-123, 1920.

A review of the work of Kobus and Wilbrink and Ledebor.

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Enfermedades de la caña de azúcar en Tucumán. (Diseases of sugar cane in Tucumán.) Rev. Indus. Agric. Tucumán **13**(1-2): 1-46, 1922. (Reprinted: id. **15**(7-8): 103-111, 1925.

Estación Expt. Tucumán Bol. No. 1, 21 p., 1924. Rev. Appl. Mycol. 2: 338-340, 4(6): 378, 1925.)

The author describes sugar-cane mosaic, which was found in all susceptible varieties cultivated in Argentine. The nature of the disease is unknown. It may be transmitted artificially, but the natural vectors are insects. Diseased canes always produce diseased plants; there is no possible cure at this time. Roguing as a means for eradication resulted in a failure, the only advisable method up to the present is the selection of healthy canes for planting.

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La transmisión del mosaico. (The transmission of mosaic.) Sugar 25: 684, 1923. (Rev. Indus. Agric. Tucumán 13(7-8): 129-131, 1923. Rev. Appl. Mycol. 3: 367-368, 1924.)

A review of the work of Brandes and others on insect transmission.

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La desinfección de la caña por la calefacción. (Sugar cane disinfection by heat.) Rev. Indus. Agric. Tucumán 13(11-12): 205-206, 1923.

This paper gives the results of attempts to control mosaic by treatment with hot water. The results were negative.

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El mosaico de la caña de azúcar. (The mosaic of sugar cane.) Rev. Indus. Agric. Tucumán 14(1-2): 6-8, 1923 (Rev. Appl. Mycol. 3: 485, 1924.)

A popular discussion of the subject.

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El mosaico o enfermedad de las rayas amarillas de la caña. (Mosaic or yellow stripe disease of the sugar cane.) Rev. Indus. Agric. Tucumán 15(7-8): 103-111, 1925. (Rev. Agric. Com. & Trab. Cuba 8(1): 23-29, 1926.)

A popular discussion of the mosaic including information on vectors and method of control.

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La desinfección de la caña. (Sugar cane disinfection.) Sugar 27(1): 53, 1925.

A popular review of Dr. Wilbrink's hot-water treatment of cane.

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Encrespamiento de las hojas de la remolacha azucarera. (Leaf curl of the sugar beet.) Rev. Indus. Agric. Tucumán 16(3-4): 39-46, 1925.

Sugar beets of Argentine are attacked by a disease called "Encrespamiento" which is different from curly top. It is carried by a leaf-hopper, *Aceratogallia sanguinolenta*.

The curly top of sugar beet in Argentine. *Phytopathology* **17** (6): 407-408, 1927.

*Agallia sticticollis* Stal. transmits the disease.

Las manchas blancas de las hojas de la caña. (The white spots of the sugar cane leaves.) *Rev. Indus. Agric. Tucumán* **17**: 259-261, 1927. (*Louisiana Planter & Sugar Manuf.* **80**: 263-264, 1928.)

El encrepamiento de las hojas de la remolacha y el insecto trasmisor. (The curling of the leaves of the beet and the insect vector.) *Rev. Ind. Agric. Tucumán* **18**(5-6): 61-66, 1927.

Popular discussion.

Apuntes sobre el mosaico de la caña de azúcar. (Notes on mosaic of sugar cane.) *Rev. Indus. Agric. Tucumán* **18** (11-12): 205-209, 1928. (*Rev. Appl. Mycol.* **7**: 743, 1928.)

A discussion of varieties not completely immune to mosaic.

Departamento de Botánica y Patología Vegetal. (Department of Botany and Plant Pathology.) *Rev. Indus. Agric. Tucumán* **18**(9-10): 172-174, 1928. (*Rev. Appl. Mycol.* **7**: 562, 1928.)

Notes on different virus diseases of economic plants. Mosaic is the only important disease. Given the results of tests of P. O. J. 2725.

La clorosis de la caña recién brotada. (Chlorosis of recently sprouted cane.) *Rev. Indus. Agric. Tucumán* **19**(7-8): 214-215, 1929.

El cultivo y las plagas del tabaco. (The cultivation and plagues of tobacco.) *Rev. Indus. Agric. Tucumán* **19**(7-8): 215-216, 1929.)

A brief note.

Las plantaciones de caña sin mosaico en Tucumán. (The cane plantations free from mosaic in Tucumán). *Rev. Ind. Agric. Tucumán* **21**: 126-127, 1931.

Report of the negative results obtained in Argentine by the roguing method for eradication of sugar-cane mosaic.

**Fawcett, H[oward] S[amuel]**

New symptoms of psorosis, indicating a virus disease of citrus. *Phytopathology* (Abstract) **23**(11): 390, 1933.

Account of record of the observations made by the author of this disease. Transmission by budding and by root cuttings was successful. He also suggests that two other citrus diseases, leprosis and ring blotch, with symptoms on older leaves of the same general nature, should be investigated as to the possibility of their virus origin.

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New information on psorosis or scaly bark of citrus. *California Citrograph* **18**(12): 326, 1933.

Additional data in regard to the new virus disease studied by the author.

**Fenne, S. B.**

Field studies of the ringspot disease of Burley tobacco in Washington County, Virginia. *Phytopathology* **21**(9): 891-899, 1931.

Steam sterilization of soil did not prevent the disease. The stick weed (*Verbesina alternifolia*) and sweet clover (*Melilotus alba*) are natural hosts.

**Ferdinandson, C[arl Christian Frederik], Rostrup S[ofie] & Ravn, F[rederik] K[olpin]**

Oversigt over Landbrugsplanternes Sygdomme i 1917. (Report on Diseases and pests in farm crops in 1917.) Denmark. *Tidskr. Plantev. Landbr.* **25**: 314-340, 1918.

The authors mentioned 69 plant diseases in the report, among which mosaic disease on beets caused a loss of 50 per cent of the crop and potato leaf-roll was listed as very conspicuous.

**Ferguson, John H.**

The particle size of biological units. *Journ. Phys. Chem.* **36**(12): 2849-2861, 1932. (Rev. Appl. Mycol. **12**: 308, 1933.)

A review.

**Fernow, Karl H[ermann]**

Spindling tuber or marginal leaf-roll. *Phytopathology* (Abstract) **13**(1): 40, 1923.

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A new host for potato mosaic (*Nicandra physaloides*) *Phytopathology* (Abstract) **13**(1): 40-41, 1923.

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Interspecific transmission of mosaic diseases of plants. *Cornell Univ. Agric. Expt. Sta. Memoir* **96**: 3-34, 1925.

The author gives the results of a large number of cross-inoculation experiments. He says—"A review of the literature discloses also the fact that most authors have omitted consideration of a factor here shown to be important, namely, the identity of the mosaic concerned."

-----  
 Potato growing in Bermuda. Amer. Potato Journ. 8(6):150-153, 1931.

Leaf-roll potato plants give no yield in Bermuda.

-----, & Black, L. M.

Yellow dwarf in New York State. Amer. Potato Journ. 9(7):116-117, 1932.

The disease has been known since 1917, severe in recent years. The severity appears to be correlated with dry weather and high temperature.

-----  
 A partially masked mosaic of potatoes. Amer. Potato Journ. 10(12):235-245, 1933.

Report of results of experimental work, given in tabular form, followed by a discussion of its interpretation.

**Ferraris, T[eodoro]**

Peach yellows, peach rosette e l'arriciamento del pesco in piemonte. Curiamo le Piante. Torino 6:101-114, 1928.

**Fife, J. M.**

A method of artificial feeding the sugar-beet leafhopper. Science n.s. 75(1938):465-466, 1932.

A description of the method.

**Figueroa, C[arlos] A[rturo]**

The mottling disease of cane and the sugar production of Porto Rico. Journ. Dept. Agric. Porto Rico 3(4):35-43, 1919.

A statistical study to determine the extent of the losses.

**Filho, A. F. O.**

O combate contra o "Mosaico" de canna de assucar. (The fight against the "mosaic" of sugar cane.) Brazil Agric. 12:65-70, 1927.

**Finch, A[lton] H., & Kinnison, A[llen] F[isher]**

Pecan rosette: soil, chemical and physiological studies. Arizona Agric. Expt. Sta. Tech. Bull. 47:407-442, 1933.

According to the authors' statement pecan rosette has been in Arizona for over twenty years, and caused the abandonment of the orchards in several counties. They present a fully detailed account of their study of this disturbance.

**Findley, W. M.**

Potato golden wonder and virus diseases. Gard. Chron. **77**  
(1992) : 154, 1925.

Brief popular notes.

**Fisher, C[ecil] E[rnest] C[laude]**

Cause of the spike disease of sandal (*Santalum album*). Indian  
Forester **44**: 570-575, 1918.

The author adheres to the idea of infectious nature of the disease  
in opposition to the autogenetic theory in support of Coleman state-  
ments. It is suggested that the disease was introduced by American  
missionaries on *Lantana Camara* which suffers from a disease whose  
agent is ultra-microscopic and carried by sucking insects.

**Fletcher, T[homas] B[ainbrigge]**

Report of the Imperial Entomologist. Agric. Inst. Pusa (India)  
Sci. Rpt. **1926-27**: 56-67, 1928. (Rev. Appl. Ent. Ser. A.  
**16**: 357-358, 1928.)

**Flexner, S[imon]**

Some problems in infection and its control. Science n.s. **36**:  
685-702, 1912.

Believes that tobacco mosaic is caused by ultra-microscopic organism  
or filterable viruses.

**Foex, [Edmond] E[tienne]**

La maladie de l' enroulement des feuilles de Pomme de terre  
dans le conton d' Orchis nord. (The potato leaf-roll disease  
in the North Orchis District.) Bull. Soc. Path. Vég. France  
**1**: 42-48, 1914.

-----, & Perret, Claude

Maladies dan Pomme de terre (Potato diseases.) Vie. Agric.  
et Rurale **3**(5) : 129-134, 1914.

-----  
Quelques causes de dégénérescence chez la pomme de terre.  
(Some causes of degeneration of the potato.) Journ. Soc.  
Nationale Hort. (France) **21**: 204-207, 1920.

A description of leaf-roll and mosaic and a discussion of a paper  
by Emile Schribaux.

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Quelques causes de dégénérescence chez la pomme de terre.  
(Some causes of degeneration in the potato.) Compt. Rend.  
Acad. Agr. France **1920**: 398-407, 1920.

-----  
La nécrose du liber de la tige de Pomme de terre atteinte de la maladie de l' enroulement. (Stem necrosis in potatoes affected with leaf roll.) *Compte Rend. Acad. Sci. (Paris)* **170**(22) : 1336-1339, 1920.

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La dégénérescence de la Pomme de terre. (Degeneration of the potato.) *Journ. Agric. Pract.* **33** : 275-279, 326-329, 344-346, 365-367, 1920.

-----  
La maladie de l' enroulement de la pomme de terre. (The leaf roll disease of potato.) *Ann. Epiphytes* **7** : 281-287, 1921.

This paper gives the results of microchemical studies on phloem necrosis.

-----  
Enroulement et leptonécrose. (Leaf-roll and leptonecrosis.) *Bull. Soc. Path. Vég. (France)* **8** : 148-149, 1921.

-----  
Les relations entre leptonécrose et l' enroulement. (Relations between leptonecrosis and leaf-roll.) *Bull. Soc. Path. Vég. (France)* **8**(1) : 25-29, 1921.

A résumé of Quanjér's studies.

-----  
Maladies á virus filtrants.—Mosaïque. (Filterable virus diseases.—Mosaic.) *Rev. of* (1) Butler, Edwin John. Some characteristics of the virus diseases of plants. *Sci. Prog.* **17** : 416-431, 1923. (2) Dickson, Bertram Thomas. Studies concerning mosaic diseases. *MacDonald Agric. Coll. Tech. Bull.* **2**, 125 p. 1922. (3) Nelson, Ray. The occurrence of protozoa in plants affected with mosaic and related diseases. *Michigan Agric. Expt. Sta. Tech. Bull.* **58**, 28 p. 1922.) *Rev. Path. Vég. et Entom. Agric.* **10** : 88-93, 1923.

This paper is a review of papers by Butler, Dickson and Nelson as mentioned above and a discussion of the enzymatic and parasite theories.

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Les maladies á virus chez les végétaux. (Virus diseases of plants.) *Rev. Path. Comp.* **25**(272) : 241-256, 1925; **26**(293) : 39-73, 1926.

#### Folsom, Donald

Potato mosaic. *Maine Agric. Expt. Sta. Bull.* **292** : 157-184, 1920.

Description and comment on effects of the disease. A study of methods of transmission and control.

-----, & Schultz, E[ugene] S[chultz]

Potato leaf roll. Maine Agric. Expt. Sta. Bull. 297:37-52, 1921.

Describes the disease and discusses methods of transmission and control.

-----  
Potato spindle tuber. Maine Agric. Expt. Sta. Bull. 312:21-44, 1923.

Gives general discussion of the disease which is carried in the juice containing parts of the plant and is transmitted by Aphis. Gives recommendations for its control by seed selection, roguing and isolation.

-----, & Schultz, E[ugene] S[chultz]

The importance and natural spread of potato degeneration diseases. Maine Agric. Expt. Sta. Bull. 316, 28 p., 1924.

Gives the effects of these diseases on yield, based on experimental field studies.

-----  
Advances in the study of virus diseases of Irish potatoes in 1923. Potato Ass'n. Amer. Proc. 10th Ann. Meeting p. 39-42, 1924.

A popular discussion of the subject.

-----  
Experiments and observations in Maine, 1924. Potato News Bull. 1:316-317, 1924.

Rugose mosaic reduced the yield five times more than mild mosaic. Witches' broom was reported from Maine and transmitted experimentally.

-----, & Schultz, E[ugene] S[chultz]

Methods of conducting the seed plot and its importance in potato improvement work. Potato Ass'n Amer. Proc. 12th Ann. Meeting, 1925.

A popular discussion.

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Methods to be observed to prevent spread of virus diseases in potatoes grown from seed stock. Potato Ass'n Amer. Proc. 1925 Ann. Meeting 11:20-26, 1926.

Popular.



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Virus diseases of the potato. Quebec Soc. for Prot. of Plants  
18th Ann. Rpt. 18:14-29, 1926.

A popular review of the subject.

-----, **Schultz, E[ugene] S[chultz], & Bonde, R[einer]**  
Potato degeneration diseases. Natural spread and effect upon  
yield. Maine Agric. Expt. Sta. Bull. 331:57-112, 1926.

This paper gives much valuable data concerning the effect of these  
diseases on yield and on the spreading of diseases.

-----  
Uniformity of nomenclature for the viruses of *Solanum tubero-*  
*sum*. Phytopathology 17(3):161-165, 1927. (Maine Agric.  
Expt. Sta. Bull. 342 (Abstract) p. 234-235, 1927.)

The author discusses the desirability of a uniform system of naming  
viruses.

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Net-necrosis versus stem-end browning in Aroostook potatoes.  
Amer. Potato Journ. 7(9):251-256, 1930.

The author discusses these diseases with reference to regions in  
which the potatoes are grown and varietal susceptibility.

-----  
Virus diseases of the potato. Potato Ass'n Amer. 17th Ann.  
Meeting Proc. 1930:83-101, 134-140, 1931.

A review of the recent literature (1928-1930) on the potato virus  
diseases is given. Considerations are given under different aspects.

-----  
Why potatoes run out. New Hampshire Hort. Soc. Ann. Rpt.  
19:90-98, 1931.

Popular account of the subject.

-----  
Potato virus diseases in 1931. Amer. Potato Journ. 9:173-181.  
1932.

A review of the subject for the year.

-----  
Growing seed potatoes under an aster cloth cage. Amer. Po-  
tato Journ. March, 1934.

Description and details of an experiment conducted by the author  
to avoid spread of virus diseases.

**Forsteneichner, F[ranz]**

Die mosaikkrankheit des Manioks. (The mosaic disease of  
Maniocs.) Tropenflanzer 35:349-350, 1932.

A record.

**Fortún Martínez, Gonzalo & Bruner, Stephen C[ole]**

Investigaciones sobre la enfermedad del mosaico o rayas amarillas de la caña de azúcar. (Investigations on mosaic or yellow stripe disease of sugar cane.) Rev. Agric. Com. & Trab. Cuba 3: 441-445, 1921.

The results of a field test with 52 varieties of cane to determine resistance and susceptibility.

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El mosaico o rayas amarillas de la caña de azúcar. (The mosaic or yellow stripe of sugar cane. Rev. Agric. Com. & Trab. Cuba 6(1): 4-8, 1924.

-----  
¿Cuál es el origen del matizado en Cuba? (What is the origin of mottling in Cuba?) Rev. Azucarera (Argentina) No. 374: 1089, 1924.

**Foster, A[rthur] C[rawford]**

"Curl" and its cure. Nat. Potato Soc. Ann. Rpt. pp 25-29, 1905.

**Fracanzani, G. A.**

Mosaicatura del Tabaco. (Tobacco mosaic) Boll. Tecn. R. Ist. Sperim. Colt. Tabacchi "Leonardo Angeloni" Scafati (Salerno) 29(4): 244-247, 1933. (Giornale di Agric. Domenica (Italy) 10(1): 5, 1933.)

Description of the disease and his experiments in Salerno, Italy, where it appears very serious. He reports his attempts to control the disease with injections of ferrous sulphate, which seems to be successful.

**Fracker, S[tanley] B[lack]**

Varietal susceptibility to false blossom in cranberries. Phytopathology 10: 173-175, 1920.

A brief discussion of the subject.

**Frank, A. B.**

Eine neue Kartoffelkrankheit? (Is a new potato disease?) Centralb. Bakt. II. 3: 403-408, 1897.

Refers to the curl disease of potatoes.

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Bemerkungen über die Kräuselkrankheit und verwandte staudenkrankheiten der Kartoffeln. (Observation of the disease of potatoes and related diseases of the stem.) Centralb. Bakt. II. 4: 683-687, 1898.

**Frank, Arthur**

Mosaic, a serious disease of potatoes. Western Washington Expt. Sta. Bi Mo. Bull. **10**: 64, 1922.

A record of the occurrence of the disease in Washington.

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Selection of disease-free berry plants. Western Washington Expt. Sta. Bi Mo. Bull. **10**: 110-111, 1923.

Record of four virus diseases.

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Diseases and insect pests of raspberries and their control. Western Washington Expt. Sta. Bi Mo. Bull. **11**: 79-81, 1923.

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Facts regarding the mosaic disease of raspberry and loganberry in Western Washington. Western Washington Expt. Sta. Bi Mo. Bull. **12**(2): 48-51, 1924.

A popular discussion of the subject.

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1924 information on winter injury, mosaic and other diseases of raspberries in Western Washington. Washington State Hort. Ass'n. Proc. **20**: 128-135, 1924.

A popular discussion of the subject.

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**Franklin, H[enry] J[ames]**

False blossom. Wisconsin State Cranberry Growers' Ass'n. Meeting **41**: 10-17, 1928.

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Massachusetts Agric. Expt. Sta. Ann. Rpt. for the Fiscal Year ending Nov. 30, 1930. (Bull. **260**). pp. 345-346, 1930.

Report cranberry false blossom.

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**Freeman, E[dward] M[onroe]**

Report of the Division of Plant Pathology and Botany. Minnesota Agric. Expt. Sta. Rpt. **1920**: 51-53, 1920.

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., & Leach, J[ulian] G[ilbert]

Report of the Division of Plant Pathology and Botany. Minnesota Agric. Expt. Sta. Rpt. **1921**: 74, 1921.

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**Freeman, W[illiam] G[eorge]**

Sugar cane mosaic. Trinidad & Tobago. Administration Report of the Director of Agric. **1922**, 12 p., 1923.

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Administration Report of the Director of Agriculture of the  
Department of Agric. Trinidad & Tobago, 1921, 12 p., 1922.  
(Rev. Appl. Mycol. 2: 394, 1923.)

Refers to campaign for the eradication of mosaic.

**Freiberg, G[eorge] W[illiam]**

Studies in the mosaic disease of plants. Missouri Bot. Gard.  
Ann. Rpt. 4(2): 175-232, 1917.

A lengthy paper giving results of microchemical studies to deter-  
mine difference in chemical elements in diseased and healthy plants.  
Also studies on physiological relations, plot experiments, tempera-  
ture, moisture and light relations, methods of transmission and a dis-  
cussion of recent investigations.

**Freise, F[riedrich] W.**

Cane diseases and plagues in Brazil. Mosaic, sereh, iliau dis-  
ease and gummosis are the most prevalent.—low yields at-  
tributed largely to losses caused by these agents. Facts  
About Sugar 25(24): 613-614, 1930.

A popular discussion of cane diseases in Brazil.

**Freitag, Julius H., & Severin, H[enry] H[erman] P[aul]**

List of ornamental flowering plants experimentally infected  
with curly top. U.S.D.A. Plant Disease Reporter 17(1):  
2-5, 1933.

Experiments of transmission of curly-top disease of sugar beet by  
the leafhopper *Eutettix tenella*. It was tried on 90 species of orna-  
mental flowering plants which include 72 genera and 33 families. A  
list of the artificially infected plants is inserted.

**Froberville, L. F. de**

Degeneration of the Uba Cane. South Africa Sugar Journ.  
7: 303-305, 1923.

**Fromme, F[red] D[enton]**

Diseases of cereal and forage crops in the United States in  
1920. U. S. D. A. Br. Plant Indus. Plant Disease Bull. sup.  
15: 173, 1921.

-----, **Wingard, S[amuel] A[ndrew], & Priode C[arl]  
N[oel]**

Ring spot of tobacco; an infectious disease of unknown cause.  
Phytopathology 17(5): 321-328, 1927.

A description of the diseased plants and the results of infection ex-  
periments.

**Fukano, Hiroshi**

Effects of tobacco mosaic upon the growth of *Bac. aroideae* Townsend the cause of tobacco hollow stalk. Bulteno Scie. Fajutl. Terkult. Kjusu Imp. Univ. Fukuoka, Japan 4(1):45-51, 1930.

(A Japanese paper with English summary.) The juice from mosaic plants was passed through a Berkefeld filter and put in Czapek's solution. It accelerated the growth of the bacteria.

**Fukushi, Teikichi**

(On the mosaic of tobacco.) Journ. Plant Prot. 14(4):217-232, (5)269-276, (6)333-339, (7)385-392, 1929.

The author gives a review of the literature, describes the symptoms and the pathological anatomy, gives the host range and the nature of the virus.

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(On the cause of the tobacco mosaic disease.) Agric. Hort. 4(11):1273-1283, 1929.

A review of the subject.

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Effects of certain alkaloids, glucosides and other substances upon the infectivity of the mosaic tobacco juice. Trans. Sapporo Nat. Hist. Soc. 11(2):59-69, 1930. (A Japanese paper with English summary.)

The author gives the results of a series of experiments which demonstrate that tobacco virus is very resistant to many chemicals.

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Aster yellows in Japan. Agric. & Hort. 5:577-584, 1930.

No parasitic organism accounting for the disease has been found.

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On the mosaic disease of broad beans. Journ. Plant Protect. 17(11):707-712, 1930. (12):779-784, 1931.

The author discusses the host range, symptom, etiology and transmission of the disease.

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(On the modes of transmission of the mosaic disease of tobacco.) Journ. Sapporo Soc. Agr. & For. 22(102):305-320, 1931.

The author discusses the methods of transmission and says that the virus was obtained in 25 out of 30 packages of commercial tobacco.

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On the intracellular bodies associated with the dwarf disease of rice plant. Trans. Sapporo. Nat., Hist. Soc. 12(1):35-41, 1931.

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A contribution to our knowledge of virus diseases of plants in Japan. Trans. Sapporo Nat. Hist. Soc. **12**(2-3):130-141, 1932.

A general review of the virus diseases in Japan. There are 71 species, included in 51 genera and 15 families. The new ones are *Primula obconica*, *P. denticulata*, *Crotalaria juncea*, *Iris pumila*, and *I. tectonum*, carnation and lilies.

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On some properties of the tobacco mosaic virus. Japan Journ. Bot. **6**(3):381-392, 1933.

A review of this phase of the subject and the results of the author's recent studies. Tobacco mosaic virus was absorbed by kaolin and alumina. The virus was most virulent at Ph. 4-7.

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Transmission of the virus through the eggs of an insect vector. Proc. Imperial Acad. **9**(8):457-460, 1933.

The author demonstrated that the virus of the dwarf disease of rice could be transmitted by *Nephotettix apicolis* hatched from eggs of virulent parent, without the young feeding on diseased plants. This is the first record of transmission through the eggs.

**Fuller, C.**

Mealie variegation. First Report Government Entomologist Natal. **1899-1900**:17-19, 1901.

This is the first record describing streak disease of sugar cane.

**Fulmek, L[eopold]**

Pelargonien - Kräuselkrankheit. (Pelargonium - Curl disease.) Oesterr. Gartenzeitg **12**:112-115, 1917.

-----, & **Stiff, A[nton]**

Ueber im Jahre 1920 orschienene bemerkenswerte Mitteilungen auf dem Gebiete der tierischen und pflanzlichen Feiden der Kartoffelpflanze. (Note worthy contributions published during 1920 to the study of insect and vegetable pests of the potato.) Centralblatt für Bakt., Abst. 2 Lief **54**:(20-24); 492-529, 1921.

**Funaoka, S[eigs]**

Beitrage zur Kenntnis der Anatomie panaschierter Blätter. (Contribution to the knowledge of the anatomy of variegated leaves.) Biol. Zentralbl. **44**:343-384, 1924.

**Gadd, C[aleb] H[erbert]**

Observations on the plot of plantains affected by the bunchy top disease at Paradeniya. Ceylon Dept. Agric. Yearbook 1925: 36-37, 1927.

A record of testing varieties. None of them are resistant.

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Bunchy top disease of plantains. Trop. Agric. (Ceylon) 66(1): 3-9, 1926.

A general discussion and geographical distribution.

**Gaget, J.**

La dégénérescence des pommes de terre. (Degeneration of potatoes.) Journ. Agric. Pract. 35: 316-318, 1921.

The author discusses the relation of insects to the disease and the difficulty of eliminating them.

**Gandía Córdova, Ramón**

La enfermedad de la caña. (The disease of sugar cane.) Rev. Agric. Puerto Rico. 3(1): 63, 1919.

Popular account discussing the occurrence of the disease in Puerto Rico.

**Garbowski, L[udwik]**

Choroby virusowe Ziemiaków w okresie 1928-1932. (Virus diseases of potatoes during the period from 1928 to 1932.) Prace Wydz. Chrób Róślin Panstw. Inst. Naukow, Gospod. Wiejsk. w Bydgoszczy (Trans. Phytopath. Sect. State Inst. Agric. Sci. in Bydgoszcz), 13: 3-136, 1933.

The author divides this article in two parts. Part I is a review of the more recent developments in the study of potato degeneration, analyzing the two tendencies, one towards the virus principle and the other towards physiological causes. In the second part he presents a very comprehensive, detailed and tabulated account of his field observations of potato varieties from Poland, Germany, England and Holland.

**Garcke**

Zur Blattrollkrankheit. (Leaf-roll disease.) Die Kranke Pflanze. 3: 41-42, 1926.

**Gard, M[edéric]**

Sur la chlorose de noyer cultivé. (Chlorosis of cultivated walnut.) Rev. Path. Vég. & Ent. Agric. 3: 264-266, 1926.

**Gardner, Max W[illiam,] & Kendrick, James B[lair]**

Soybean mosaic. Journ. Agric. Res. 22(2): 111-114, 1921.

Original description and results of inoculation experiments.

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Turnip mosaic. Journ. Agric. Res. **22**(3):123-124, 1921.

Original description and results of inoculation experiments.

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Overwintering of tomato mosaic. Bot. Gaz. **73**(6)469-485, 1922.

(Phytopathology (Abstract) **12**(1):15, 41-42, 1922.)

Evidence indicating that the disease overwinters in several species of *Physalis*.

-----, & -----

Tomato mosaic. Indiana Agric. Expt. Sta. Bull. **261**, 24 p., 1922

Gives history, distribution, losses, susceptibility, related plants, symptoms and spread.

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Field control of tomato mosaic. Phytopathology **13**(8):372-375, 1923.

Gives results of control of the disease by the eradication of virus carrying weeds. *Physalis subglabrata* and *Solanum carolinense* are the most important.

-----, & -----

Potato leaf-roll in Indiana. Indiana Agric. Expt. Sta. Bull. **284**, 23 p., 1924.

Gives the results of yields based on experimental plantings. Also discusses spread, immune varieties and methods of control.

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Department of botany report. Indiana Agric. Expt. Sta. Ann. Rpt. **1924**:13-20, 1924.

Reports that potato leaf roll reduced yield from 38 to 66 per cent. Also new evidence has been obtained that a very destructive streak (winter blight) of tomatoes is a severe manifestation of mosaic.

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Hyperplastic crushing of the tracheal tubes in mosaic tomato stem. Phytopathology **15**(12):759-762, 1925.

A very interesting paper on histological studies.

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Necrosis, hyperplasia and adhesions in mosaic tomato fruits. Journ. Agric. Res. **30**(9):871-888, 1925.

A very interesting paper on histological studies.

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Indiana plant diseases, 1925. Indiana Acad. Sci. Proc. **36** (1926):231-247, 1927.

Notes on virus diseases of bean, *Trifolium arvensis*, *T. subterraneum*, *T. incarnatum*, *T. resupinatum*, cow-pea, eggplant, pepper, tomato and velvet bean.



-----, & Kendrick, James B[lair]

Potatoes.—A virus disease menace to tomatoes. Hoosier Hort.  
9(1) : 5-16, 1927.

A popular discussion.

-----, & -----

Potato mosaic and leaf-roll: Spread and effect on yield.  
Trans. Indiana Hort. Soc. p. 158-168, 1928.

This paper gives valuable data based on field studies.

Gates, R. R[uggles]

Ultramicroscopic organisms of filterable viruses. Nature 11  
(2950) : 692, 1926.

Gaylord, F[ay] C[laude,] & Gregory C[hables] T[ruman]

More and better potatoes. Indiana Agric. Expt. Sta. Bull. 89,  
24 p., rev., 1923.

Geerts, J[ohannes] M[arinus]

Het optreden van Strepenziekte in den westmoeson van 1923-  
1924. (The occurrence of stripe disease in the west monsoon  
of 1923-1924.) Arch. Java Suikerind. 46:1295-1331, 1924.  
(Rev. Appl. Mycol. 4:244-245, 1925. Facts About Sugar  
20(2) : 34, 1925.)

This is a discussion of the status of the mosaic (not stripe) of sugar  
cane in Java at the present time. The paper contains much statisti-  
cal data.

Gertz, O[tto Daniel]

Makrokenieska ägghivileprof a blad. (Macrochemical test of  
leaves.) Bot. Not. 1917: 1-35. (Zeitschr. Pflanzenk. 29: 51-  
52, 1919.)

Ghesquiere, J[ean]

Sur la "mycosphaerellose" des Feuilles du manioc. (On my-  
cosphaerellosis of cassava leaves.) Bull. Inst. Roy. Colon.  
Belge 3(1) : 160-178, 1932.

In a foot note to this paper the author states that the carrier of  
mosaic is an Aleurodid,—*Bemisia mosaicivecto* n. sp.

Ghimpu, V.

Bolile cu virus ale Tutunului. (Virus diseases of tobacco.)  
Bul. Cultivarei si Fermentarei Tutunului. Bucarest 21(2) :  
163-214, 1932.

Detailed account of the author's field observations based on controlled experiments of four virus diseases of tobacco occurring in Rumania. These are: mottled mosaic, ring spot, veinbanding and spot mosaic. A bibliography of 120 titles is appended. The author also considers his inoculation experiments and cytological studies of diseased tobacco plants.

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Afectuinile patologice si inamiciei Tutunului din Romania in 1932. (Pathological troubles and pests of tobacco in Rumania during 1932.) Bull. Cultivarei si Fermentarei Tutunului, Bucarest. 21(4) : 9, 1932.

Notes on virus diseases of tobacco occurring in Rumania.

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Sur les maladies á virus de quelques Solanées. (On the virus diseases of some Solanaceae.) Compt. Rend. Soc. Biol. 112 (11) : 1113-1115, 1933.

List and description of some Solanaceous plants which have been found affected with virus diseases in Rumania, description and classification of the diseases.

**Giddings, N[ahum] J[ames], Allard, H[arry] A[rdell] & Hite, B[ert] H[olmes]**

Inactivation of the tobacco-mosaic virus by high pressures. Phytopathology 19(8) : 749-750, 1929. (Rev. Appl. Mycol. 9 (2) : 138, 1930.)

No infection occurred with juice subjected to a pressure of 130,000 pounds. The enzyme zymase was inactivated at a lower pressure.

**Gigante, R[oberto]**

Ricerche preliminari sopra un' alterazione non parassitaria delle olive. (Preliminary researches on a disorder not parasitic of the olive.) Rendic. R. Accad. Lincei. 17, 6(1) : 99-103, 1933.

**Gilbert, A[lfred] H[olley]**

Correlation of foliage degeneration diseases of the Irish potato with variations of the tuber and sprout. Journ. Agric. Res. 25(6) : 255-266, 1923.

Gives the results of studies whereby the author was able to correlate symptoms of certain diseased on certain varieties.

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Spindle tuber and giant hill. Potato News Bull. 1 : 291-292, 1924.

These two diseases are definitely recognized.

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Studies on spindle tuber of potato. Potato Ass'n. Amer. Proc. 1924 Ann. Meeting 11:101-102, 1925.

A popular discussion of the subject.

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"Giant hill" potatoes a dangerous source of seed: A new phase of spindle tuber. Vermont Agric. Expt. Sta. Bull. 245, 16 p., 1925.

This paper gives symptoms and method of control.

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Net-necrosis of the potato. Phytopathology 17(8):555-561, 1927.

Several types of necrosis are found in potatoes. One is definitely associated with leafroll.

-----  
Net necrosis of the potato tuber. Amer. Potato Journ. 4(8):90-92, 1927.

Popular discussion.

-----  
Production of potato tuber necrosis. Science 67(1740):464-465, 1928.

The author grew healthy and leafroll potatoes in cages. *Myzus persicae* was colonized on diseased plants and then transferred to the healthy plants. When the potatoes were harvested, the healthy plants were found to show phloem necrosis.

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Net-necrosis of Irish potato tubers. Phytopathology (Abstract) 19(1):82, 1929.

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Net-necrosis of Irish potato tuber. Vermont Agric. Expt. Sta. Bull. 289, 36 p., 1928. (Rev. Appl. Mycol. 9(7):476, 1930.)

The author gives a review of the literature, a description of the disease and a very lengthy study of the histology.

#### Gilbert, W[illiam] W[illiams]

Cucumber mosaic diseases. Phytopathology 6(2):143-144, 1916.

A brief statement giving the distribution of the disease.

-----  
Cucumber diseases in the Middle West. Phytopathology (Abstract) 6(1):104-105, 1916.

#### Gloyer, W[alter] O[scar]

Effect of straw mulch on potato leaf-roll. Phytopathology (Abstract) 10(1):60, 1920.

**Goddard, E[rnest] J[ames], Magee, C[harles] J., & Collard, H.**

Bunchy top in bananas, (12) Queensland Agric. Journ. **24**(5): 424-429, 1925. (Fruit World Australasia 25: 519-522, 1925.)

The disease is carried by an Aphid, *Pentalonia nigro-nervosa*. The sieve tubes undergo modifications.

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Bunchy top in bananas: Final report of investigation committee. Queensland Agri. Journ. **25**(6): 506-510, 1926.

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Bunchy top of bananas. Journ. Council Sci. & Indus. Res. (Australia) **2**(1): 24-27, 1929.

The disease attacks all species of bananas and Manila Hemp, but has not been found on any plants other than species of *Musa*. The author describes the symptoms and gives suggestions for its control.

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Virus diseases of plants. Nature **40**(1): 1929.

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Virus diseases and their bearing on the cell theory and other biological concepts. Proc. Roy. Soc. Queensland **40**(1): 2-12, 1929.

**Gold, T[heodore] S[edgwick]**

Report of Commissioner on peach yellows. Connecticut Board of Agric. Sec. Rpt. **1896**.

Gives a discussion with special reference to legal regulations.

**Golding, F. D.**

A vector of leaf curl of cotton in Southern Nigeria. Empire Cotton Growing Rev. **7**(2): 120-126, 1930.

Reports of experiments to determine insect vectors of "leaf curl" of cotton. It was found an unidentified *Aleurodid* is able to transmit leaf curl in cotton.

**Goldstein, Bessie**

Cytological study of living cells of tobacco plants affected with mosaic disease. Bull. Torrey Bot. Club **51**(6): 261-273, 1924.

A study of the living cells of mosaic tobacco plants in which she describes the movements of the intracellular bodies.

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A cytological study of the leaves and growing points of healthy and mosaic tobacco plants. Bull. Torrey Bot. Club **53**(8): 499-599, 1926.

This paper gives a review of the literature, the symptoms of the disease, a discussion of the strains of mosaic, methods of transmission, symptomless carriers, filtration and other properties of the virus, influence of environment on symptoms and a very thorough study of the histology and cytology of diseased plants.

The X bodies in the cells of dahlia plants affected with mosaic disease and dwarf. *Bull. Torrey Bot. Club* **54**(4):285-293, 1927. *Phytopathology (Abstract)* **17**(1):52, 1927.

This paper gives a discussion of the X bodies found in dahlia.

Nuclear form as related to functional activities of normal and pathological cells. *Bot. Gaz.* **86**(4):365-383, 1928.

A discussion of the effects of the disease on the nuclei.

**Goldsworthy, M[arion] C.**

Attempt to cultivate the tobacco mosaic virus. *Phytopathology* **16**(11):873-875, 1926.

The author duplicated the work of Olitsky but the virus did not increase in the culture.

**Gontière, J. F.**

Sur quelques maladies du tabac. (Some tobacco diseases.) *Journ. Agric. Pract.* **64**:659-571, 1900. (*Rev. Centralbl. f. Bkt.* 7:733, 1901.)

**Goot, P[ieter] van der**

Overzicht der voornaamste ziekten van het aardappelgewas in Java. (Survey of the principal disease of the potato in Java.) *Inst. Plantenziekten Bull.* **18**, 42 p., 1924.

Aateekening over aardappelcultuur en virusziekten in Ned-Indië. (Plans on potato culture and virus diseases in Ned-India.) *Tijdschr. Plantenziekten* **31**:167-178, 1925.

**Goseco, A[ndres] P.**

The transmission of the Fiji disease of the sugar cane. *Sugar News* **7**(10):736-739, 1926.

**Goss, R[obert] W[hitmore]**

Effect of environment on potato degeneration diseases. *Nebraska Agric. Expt. Sta. Bull.* **26**, 40 p., 1924.

This is a very thorough discussion of symptoms with reference to environments, based on field tests.

**, & Peltier, Geo[ge] L[eon]**

Further studies on the effect of environment on potato degeneration diseases. *Nebraska Agric. Expt. Sta. Bull.* **29**, 32 p., 1925.

Field studies devoted largely to the influence of climatic factors on the symptoms of the various diseases.

-----  
Effects of spindle tuber disease on sprouting. Potato News Bull. 2: 261-262, 264, 1925.

Diseased tubers sprout later than healthy tubers. Sometimes the diseased tubers fail to produce plants but form tubers from the seed piece.

-----  
A simple method of inoculating potatoes with spindle tuber disease. Phytopathology 16(3): 233, 1926.

The author's work shows that the disease can be transmitted in this manner. The loss in the next crop was 52 per cent.

-----  
Transmission of potato spindle tuber by cutting knives and seed piece contact. Phytopathology 16(4): 299-304, 1926.

This paper gives the results of experiments which indicate that the disease may be transmitted by cutting knives and by contact with freshly cut seed pieces.

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Transmission of potato spindle tuber by grasshoppers. (Locustidae) Phytopathology 18(5): 445-488, 1928. (Phytopathology (Abstract) 18(1): 140, 1928.)

The author presents evidence that the disease is carried by grasshoppers. He believes that the importance of the aphids has been over-estimated.

-----  
The rate of spread of potato virus diseases in Western Nebraska. Journ. Agric. Res. 39(1): 83-74, 1929. (Rev. Appl. Mycol. 9(1): 51-52, 1920.)

This paper gives very interesting field data from field experiments with several virus diseases.

-----  
Insect transmission of potato-virus diseases. Phytopathology (Abstract) 20(1): 136, 1930.

Spindle tuber and unmottled curly dwarf were transmitted by grasshoppers (*Melanoplus* sp.) flea beetle (*Epitrix cucumeris* and *Systema elongata*), the tarnish plant bug (*Lygus pratensis*) and the Colorado potato beetle (*Leptinotarse decemlineata*). The spindle tuber was transmitted by the leaf beetle (*Disonycha triangularis*).

-----  
The symptoms of spindle tuber and unmottled curly dwarf of the potato. Nebraska Agric. Expt. Sta. Res. Bull. 47, 39 p., 1930.

The author gives a review of the literature and a discussion of symptoms with reference to environment. The symptoms are modified in plants grown under glass and tuber symptoms increase under high soil moisture content and under high soil temperatures.

-----  
Infection experiments with spindle tuber unmottled curly dwarf of the potato. Nebraska Agric. Expt. Sta. Res. Bull. 53, 36 p., 1931.

Field experiments and observations are discussed by the author.

**Gounaux, C[laude] B[ernard]**

Mosaic disease of sugar cane in Louisiana. Louisiana Planter 65: 269, 1920.

Recommendations for roguing.

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Sugar cane test field work. Louisiana Agric. Expt. Sta. Bull. 202, 32 p., 1928. (Rev. Appl. Mycol. 7: 741, 1928.)

A report on varieties resistant to mosaic and other diseases.

**Gowdey, C[arleton] C.**

Relationship of insects to mosaic disease of sugar cane. Jamaica Dept. Agric. Ann. Rpt. 1924: 19-20, 1924. (Rev. Appl. Ent. ser. A 12: 442-445, 1924.)

**Grainger, J[ohn]**

An infectious chlorosis of the dock (*Rumex obtusifolius*.) Leeds Phil. Soc. Sci. Sect. 1(8): 360, 1928.

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An attempt to cultivate the virus of tobacco mosaic *in vitro*. Leeds Phil. Soc. Sci. Sect. Proc. 2(1): 33-35, 1929. (Rev. Appl. Mycol. 9: 564, 1930.)

-----  
The appearance of bean mosaic in England. Leeds Phil. Soc. Sci. Sect. Proc. 2(1): 32, 1929.

The first record of this disease in England.

-----, & **Cockerham, G.**

Some properties of the virus extract of dock mosaic. Leeds Phil. Soc. Sci. Sect. 2(3): 120-124, 1930.

Procedure of experiment is explained. Although these results did not afford conclusive proof that the cause of chlorosis in docks is a virus, they are considered sufficient to justify the provisional classification of this disturbance among this group of diseases. *Rumex obtusifolius* and *R. lanceolatus* were studied and observed.

-----, & **Angood, Edith**

-----, & **Angood, Edith**  
The insect transmission of raspberry mosaic. Leeds Phil. Soc. Sci. Sect. Proc. 2(4): 183-184, 1931.

Conclusions were reached by the authors as to capability of *Aphis rubiphila* in transmitting raspberry mosaic in England.

-----  
The movement of tobacco mosaic virus in its host. *Ann. Appl. Bio.* **20**(2): 236-257, 1933.

Extensive work explaining his experiments on the subject.

-----, & **Heafford, Rachel M.**

Some effects of the ordinary tobacco mosaic upon the developmental anatomy of the host plant. *Proc. Leeds Phil. Soc. Scient. Sect.* **2**(9): 406-415, 1933.

Brief report of the results obtained by the authors' studies of the effect on the developmental anatomy of tobacco leaf of Johnson's No. 1 virus or ordinary tobacco mosaic.

-----  
Virus diseases of plants. Oxford Univ. Press. 104 p., 1934.

A brief but very complete discussion of our knowledge of virus diseases up to date in which the author includes methods of work.

**Gram, Ernst**

Kan vi kontrollere vs fra Bladrullesygen. (Can potato leaf-roll be controlled by inspection?) *Vort Landbrug* (Copenhagen) **41**: 416-417, 1922.

The author urges the use of localities as "sanatoria" and the practice of rigid inspection.

-----  
Forsog med oalsstedets indflydelse paa kartoffelens bladrullesyge. (Potato leaf-roll influenced by the origin of the tubers.) *Tidsskr. Planteavl* **23**: 769-806, 1922. (*Int. Conf. Phytopath., Holland* p. 38-39, 1923.)

A review of our knowledge of this disease with the results of field experiments. The author reports that the disease was less prevalent when May and June were cool and moist.

-----  
Einfluss des Anbauortes auf die Blattrollkrankheit der Kartoffel. (Influence of local conditions on the leaf roll disease of potato.) *Angew Botanik* **5**(1): 1-20, 1923.

-----, & **Rostrup, Sofie**

Oversight over Sydomme hos Landbrugets og Havebrugets kulturplanter i 1922. (Survey of the diseases of cultivated agricultural and horticultural plants in 1922.) *Tidsskr. for Planteavl.* **24**(2): 236-307, 1923.

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Oversight over Sydomme hos Landbrugets og Havebrugets Kulturplanter i 1923. (Survey of the diseases of cultivated



agricultural and horticultural plants in 1923.) Tidsskr. Planteavl. **30**(3): 361-412, 1924.

Mosaikkeyge i Drivhusene. (Mosaic diseases in greenhouses.) Gartner Tidende 8 p., 1924.

Mosaikkeyge i Rodfrugterne. (Mosaic in root crops.) Vort. Landbrug **43**: 181-184, 1924.

Records of occurrence and discussions.

Mosaikkeyge hos Korsblomstrede. (Mosaic in crucifers.) Dansk. Fravl., Kobenhavn (Abstract) **8**: 41-42, 1925.

**Granovsky, A[lexander] A[nastacievitch]**

Alfalfa "yellow top" and leafhopper (*Empoasca fabae*.) Journ. Econ. Ent. **21**(2): 261-267, 1928.

This disease appears to be due to a virus but the proof is not positive. It is associated with the common potato leafhopper *Empoasca fabae*.

Differentiation of symptoms and effect of leaf-hopper feeding on histology of alfalfa leaves. Phytopathology (Abstract) **20**(1): 121, 1930.

**Grant, Theodore J.**

The host range and behavior of the ordinary tobacco-mosaic virus. Phytopathology **24**(4): 311-336, 1934.

Based on experiments the author states that the host range of the ordinary tobacco-mosaic virus has been extended to include 29 species, representing 14 widely separated families. It was generally regarded as limited to certain species of the *Solanaceae*. In the non-solanaceous hosts the symptoms are marked by variations from masked symptoms to typical chlorosis, mottling, malformations, necrosis and stunting. The distribution of the virus also varies. The author describes also the behavior of the virus in those non-solanaceous host. Also gives account of intracellular bodies associated with ordinary mosaic virus established cytologically.

**Gratia, A.**

Pluralité antigénique et identification sérologique des virus de plantes. (Antigenic plurality and serological identification of plant viruses.) Compt. Rend. Soc. Biol. **114**(35): 923-924, 1933.

The author followed Purdy's serological experiments with tobacco mosaic. He gives briefly but comprehensively the results obtained from which he concluded that the antigenic plurality of plant viruses is evident.

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Qualité antigénique des virus des plantes et des bactériophages.  
(The antigenic quality of plant viruses and bacteriophages.)  
Compt. Rend. Soc. Biol. 114(35): 925-926, 1933.

Based on the results obtained in the preceding experiments the author gives his observations as to the antigenic qualities of the virus under studies. He also calls attention to the analogies between tobacco mosaic and the bacteriophage which he is likewise inclined to refer to exogenous agency.

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Identification sérologique et classification des virus des plantes.  
Distinction entre l' antigene mosaïque et l' antigène végétal.  
(Serologic identification and classification of plant viruses.  
Distinction between mosaic and plant antigen.) Compt.  
Rendus. Soc. Biol. (Paris) 115(11): 1239-1241, 1934.

**Gratz, L[evi] O[tto,] & Schultz, E[ugene] S[chultz]**

Observations on certain virus diseases of potatoes in Florida and Maine. Amer. Potato Journ. 7(8): 187-200, 1930.

The symptoms and results of these diseases are practically the same in the two places.

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Diseases and climate pertaining to the Florida and Maine sections. (Potato virus diseases.) Phytopathology 20(4): 267-288, 1930.

-----  
Transmission of spindle tuber of potatoes through the usual commercial practices. Proc. Potato Assoc. Amer. 1930. 17: 73-82, 1931.

**Gravier, Gabriel**

Conferencia pronunciada por el Dr. Carlos E. Chardon, Comisionado de Agricultura de Puerto Rico en la Estación Experimental Agronómica sobre la enfermedad del mosaico o matizado de la caña de azúcar. (Conference delivered by Dr. Carlos E. Chardon, Commissioner of Agriculture of Porto Rico in the Agricultural Experiment Station on "mosaic" or "mottling" disease of sugar cane.) Rev. Agric. Com. & Trab. Cuba 7(8): 29-32, 1925.

**Green, Samuel B[owdlear]**

Leaf curl of raspberry. Minnesota Agric. Expt. Sta. Rpt. p. 230, 1894.

**Gregory, C[harles] T[ruman,] & Hansen, A[lbert] A[ugust]**  
Cucumber and muskmelon mosaic. *Market Growers* 31:180,  
1922.

Popular.

**Grey, Robert M[elrose]**

The new cane disease in Cuba. *Louisiana Planter* 63(6):90,  
1919.

The author states that the "yellow stripe" has been known in Cuba for eighteen years, that infected cuttings frequently produced healthy plants and that the disease has not caused injury. It appears to be influenced by weather.

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Sobre la enfermedad del matizado en la caña. (On sugar cane mosaic disease.) *Rev. Azuc. & Agric.* 1(6):132-134, (7):157-160, 1921. (*Louisiana Planter* 63:199, 1921.)

The author states that the disease which he has been studying is the "yellow stripe" and that,—Climatic conditions have a direct influence on the appearance, diminution and self-eradication of mottling chlorosis on field plants. During moist, wet, warm weather when growth action is rapid it is more readily expelled.

**Griffiths, David**

Daffodils. U.S.D.A. Circ. 122, 73 p., 1930.

Under "diseases" a group of conditions known as "broken" is mentioned which comprises, mottling, mosaic, yellow stripe, grey disease, etc., some of which are believed to be due to a virus.

**Grieve, B. J.**

"Rose wilt" and "dieback". A virus disease of roses occurring in Australia. *Australia Journ. Expt. Biol. & Med. Sci.* 8(2):107-121, 1931.

A description of a disease that can be transmitted by filtered juice.

**Groene, F. de**

Verschil in toeneme in het percentage mosaikziekte bij. Eigenheimers, verbouwd op zware Klei en lichte zavelgrond. *Tijdschr. Plantenziekten* 36(1):13-16, 1930.

The experiment showed that potato mosaic is more easily transmitted in sandy soil than in heavy loams.

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Mededeelingen over proeven met. Eigenheimer in den Wilhelminapolder met. betrekking tot de verbreding der mosaikziekte. *Landbouwk. Tijdschr.* 42(509):553-561, 1930.

**Grove, A[rthur]**

Diseases of lilies. *Gard. Chron.* 81:178-179, 197-199, 1927.

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The diseases of lilies. Gard. Chron. **86**:10, 1929.

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The diseases of lilies. Gard. Chron. **88**(2290)408-409, 1930.

The author calls the attention to the probability that the mosaic disease of lilies is found in the Japanese imported stock.

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The diseases of lilies. Gard. Chron. **89**(2302):110, 1931.

Short article giving explanatory notes on a series of photographs received by the author and calling the attention to the alarming increase of mosaic on lilies from imported stock from Japan.

**Grubb, N. H., & Masee, A. M.**

Raspberry mosaic. East Malling Res. Sta. Kent, Ann. Rpt. **1923**:131-133, 1924.

**Guba, E. F.**

Strawberry gold disease. Massachusetts Agric. Expt. Sta. Ann. Rpt. (Bull. **280**) **1931**:204, 1932.

The author reports a disease transmitted by the seed with marked stunting and necrosis, characteristics of a virus disease. Vegetative propagations acquired the disease.

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"Suspected mosaic" of the strawberry. Phytopathology **23** (8):654-661, 1933.

The author reports a disease on strawberries named "gold leaf" in Massachusetts and restricted to the Howard 17 variety. The same disorder is designated as "suspected mosaic" by Berkeley and "non infectious chlorosis" by Clark. It is evidently identical with the chlorosis, yellows or xanthosis studied by Plakidas. The author concludes with a description of the disease and his observations on transmission.

**Gulyás, Antal**

A dohány levél márvásvyozott foltossága (panaschirozotttsága) és a mozaik. (A chlorosis of tobacco leaves and the mosaic disease.) Kiserletügyi Kö zlemények **31**(3):261-273, 1928.

The author describes a chlorosis which is not a virus disease and compares it with mosaic.

-----  
Untersuchungen über die Blattfleckenkrankheiten des Tabaks. (Investigations about the leaf spot diseases of tobacco.) Jahrb. K. ung. Land. Akad. Debrecen **1928**:20-24, 1928.

**Güssow, H[ans] T[heodor]**

Leaf-roll in tomatoes. Phytopathology **6**(6):447, 1916.

A leaf-roll similar in appearance to the leaf-roll of potatoes.

-----  
 Observations on obscure potato troubles. *Phytopathology* **8**  
 (9) : 491-495, 1918.

In Part III potato streak disease of potato is discussed. Streaks are similar to those sometimes found in mosaic but no connection was found between the two diseases. No organism was found. In Part II potato mosaic could not be transferred by contact but was transmitted by inarched graft.

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 Bean mosaic. Canada Dept. Agr. Expt. Farms. Interim Rept. of Bot. **1921-22** : 26-27, 1922.

**Gutermann, C[arl] E[dward] F[rederick]**

A preliminary report on mechanical transmission of the mosaic of *Lilium auratum*. *Phytopathology* **18**(12) : 1025-1026, 1928.

A description of methods.

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 The lily disease investigation fellowship. Hort. Soc. New York, Yearbook p. 34-37, 1929.

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 Diseases of lilies. For the lily diseases investigations fellowship. Hort. Soc. New York, Yearbook, **1930** : 51-152, 1931. (Final summary of the work on diseases of lilies. Boyce Thompson Inst. Prof. Paper **1**(19) : 146-197, 1931.)

A part of these papers is devoted to the mosaic disease. First record by Stewart in 1896. Description of symptoms pathogenicity, transmission by *Aphis gossypii* and control.

**Haas, A[lbert] R[ichard] C[arl], Batchelor, L[eon] D[exter] & Thomas, E[llis] E[dward]**

Yellows or little-leaf of walnut trees. *Bot. Gaz.* **86**(2) : 172-192, 1928.

This disease is not infectious and there is no proof that it is due to a virus.

**Hach, Otto**

Cane varieties, mosaic disease and fertilizers in the West Indies.

*Facts About Sugar* **25**(16) : 377-379, 1930.

Popular discussion on fertilizer suggesting the use of potash to control mosaic disease on sugar cane.

**Haddon, F. C.**

Cane mosaic and insects. *Hawaiian Planters' Rec.* **32**(1) : 130-142, 1928, (*Rev. Appl. Mycol.* **7** : 742-743, 1928, *Facts About Sugar* **23**(32) : 758-759, 1928.

The author transmitted mosaic to 22 different species of grasses and obtained different characteristics.

**Haegele, R. W.**

The beet leaf-hopper (*Eutettix tenellus* Baker): a survey in Idaho. Idaho Agric. Expt. Sta. Bull. **156**, 28 p., 1927.

This paper does not contain any discussion of a virus disease but is of interest because of the relation of the insect to sugar-beet curly-leaf disease.

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Field studies of the beet leafhopper *Eutettix tenellus* Baker. Idaho, Agric. Expt. Sta. Bull. **182**, 51 p., 1932.

This paper does not deal with a virus disease but is of value because this insect is a vector for the curly leaf of sugar beet.

**Hall, A. D[aniel]**

The breaking of tulip species. Gard. Chron. **85**(2215):423, 1929.

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Virus diseases of plants. Gard. Chron. **91**(2364):293-294, 1932.

Brief account on virus diseases of garden plants, more especially on Monocotyledonous among which are mentioned: tulip, gladiolus, freesia, lily, iris, crocus, *sternbergia*, and narcissi.

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The transmission of tulip breaking. Gard. Chron. **93**(2420):330-331, 1933.

Report of experiments in tulip breaking transmission by means of insect vectors. The insects used were *Myzus persicae*, *Macrosiphum gei* and *Anuraphis tulipae*.

**Hall, C[onstant] J[ohan] J[acob] van**

Ziekten en plagen der cultuurgervassen in Nederlandsch Indie in 1922. (Diseases and pests of economic plants in the Dutch East Indies in 1922.) Meded. Inst. voor Plantenziekten **58**, 42 p., 1923.

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Ziekten en plagen der cultuurgervassen in Nederlandsch Indie in 1923. (Diseases and pests of economic plants in the Dutch East Indies in 1923.) Meded. Inst. voor Plantenziekten, **64**, 47 p., 1924.

-----  
Nine neue Kaffee-Krankheit in Nederländisch-Indien. (A new coffee disease in the Netherland Indies.) Intern. Landw. Rundschau p. 864, 1928.

Phloem necrosis of coffee.

**Halle, T[hore] G[ustafson]**

On leaf-mosaic and anisophylly in paleozoic equisetale. *Svensk. Bot. Tidskr.* **22**: 230-235, 1928.

**Hallier, E.**

Die Ursache der Kräuselkrankheit. (The cause of curl disease.) *Zeitschr. Parasitenk.* **4**(2): 48, 1875.  
Historical value only.

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Die Kräuselkrankheit der Kartoffeln. (The curl disease of potato.) *D. Landw. Presse* 79, 86, 87, 1876.

**Historical.**

**Hamann**

Die Blattrollkrankheit der Kartoffeln. (The leaf roll disease of potatoes.) *Hess. Landw. Zeitg.* **81**: 311, 1911.

**Hamblac, H.**

La mosaïque de la canne à sucre. (The mosaic of sugar cane.) *Journ. Stat. Agron. Guadeloupe* **3**: 86-91, 1923.

**Hamblin, Charles O[swald]**

Spotted wilt of tomatoes. *Agric. Gaz. New S. Wales* **32**(1): 50, 1921.

The disease appears to be infectious but the method of transmission has not been observed.

-----  
Overwintering of spotted wilt of tomatoes. *Agric. Gaz. of New South Wales.* **32**(8): 547, 1921.

A brief statement that this disease is carried through the winter in old plants.

**Hamilton, Marion A.**

Notes on the culturing of insects for virus work. *Ann. Appl. Biol.* **17**(3): 487-492, 1930.

The author gives a method for keeping pure and uninfected cultures of aphides for virus work.

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On three new virus diseases of *Hyoscyamus niger*. *Ann. Appl. Biol.* **19**(4): 550-667, 1932.

They are described as Hy. I, Hy. II, Hy. III, Hy. IV. They occur on other solanaceous plants including the potato. Hy. II, Hy. III, will not pass through a Chamberland or L-3 filter but are transmitted to all hosts, except tomato, by *Myzus persicae*.

**Hanken, H. A.**

Verslag van de proefneming gedaan in "De Wilhelminapolder" in verband met den achteruitgang van aardappel-ppotgved afkomstig van gelipke afstamming in een streck maar op verschillende grondsoort. Tijdschr. Plantenziekten **31**:163-165, 1925.

**Hansford, C[lifford] G[erard]**

Sugar and mosaic disease of cane. Journ. Jamaica Agric. Soc. **27**(8): 865-869, 1923.

History and description of the disease. Methods of transmission and control.

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The mosaic disease of sugar cane. Jamaica Dept. Agric. Microbiol. Circ. **2**, 14 p., 1923.

A very complete popular discussion of this disease.

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Mosaic disease of canes. Journ. Jamaica Agric. Soc. **27**:961-964, 1923.

The author discusses the spread of the disease, methods of eradication and the results of experimental work.

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Forms of mosaic disease. Journ. Jamaica Agric. Soc. **29**(1): 13-14, 1925.

A brief statement of different types of chlorotic diseases. A paper read by the author, discussing infection, transmission, and necessity of control.

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Mosaic diseases of sugar cane. West Indies Agric. Conf. Proc. 1924, **9**:76-82, 1925. (Rev. Appl. Mycol. **5**(2):134, 135, 1926.)

This paper is devoted almost entirely to control and includes a discussion of transmission by *Aphis Maidis*.

-----, & Murray, P[ercival] W[aterhouse]

The mosaic disease of sugar cane and its control in Jamaica. Journ. Dept. Agric. Microbiol. Circ. **6**, 39 p., 1926. (Int. Sugar Journ. **29**(341): 240-242, 1927. Rev. Appl. Ent. Ser. A. **15**: 96, 1927. Rev. Appl. Mycol. **6**:185, 1927.)

This is in reality two papers. The first by the senior author giving general discussion of symptoms, cause, transmission, hosts, effects on the cane and methods of control. The second by the junior author stating his experience in field control of the disease.



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Annual Report of the Mycologist. Uganda Dept. Agric. Ann. Rpt. 1920: 48-49, 1931.

Mosaic is still the most important sugar-cane disease. P. O. J. 213, 2725 and 2727 are planted as resistant or immune varieties. Streak disease of corn prevails but is not found in sugar cane.

**Hanson, A[rthur] P[anton]**

Mosaic disease. Journ. Jamaica Agric. Soc. 28: 242-243, 1924.  
The author discusses symptoms, effects and methods of control.

**Haring, C[larence] M[elvin]**

The beet leafhopper *Eutettix tenella*, Baker. California Agric. Expt. Sta. Ann. Rpt. 1920-21: 41-42, 1922.

**Harreveld, Ph[ilippus] van**

Strepenziekte in bibituuinen (Stripe diseases in nurseries.) Arch. voor de Java Suiker Indus. 18: 919-922, 1919.

An unusual outbreak of the disease in nurseries was noticed this year. Planting of healthy cuttings improved the conditions.

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Gelestrepenziekte en bladluizen. (Yellow-stripe disease and leaf lice.) Arch. voor de Java Suiker Indus. 30(16): 261-262, (17): 362-364, 1922. (Korte Meded. Proefstation Java Suiker Indus. No. 4, 1922.)

A popular discussion.

**Harrington, F[rank] M.**

Tuber indexing versus tuber-uniting and roguing in seed potato production. Amer. Potato Journ. 9(8): 128-131, 1932.

A summary of field studies.

**Harris, R. V.**

Grafting as a method for investigating a possible virus disease of the strawberry. Journ. Pom. & Hort. Sci. 10(1): 35-41, 1932.

Description of method.

-----  
The strawberry "yellow edge" disease. Journ. Pom. & Hort. Sci. 11(1): 56-76, 1933.

Account of two years experimental work, the results of which showed that the disease is of the virus type transmissible by grafting, gives method of control.

-----, & **Grubb, N. H.**

The commercial control of raspberry-mosaic disease. East Malling Res. Stat. Ann. Rpt. 1932: 149-151, 1933.

Description of work done on the establishment of mosaic-free nurseries of raspberries. Full directions are given for the planting and maintenance of such nurseries.

**Hart, W. C., & Rengaswamy, S.**

Preliminary investigations into the cause and cure of spike diseases of sandal (*Santalum album*) in the North Salem Division. Madras Presidency. Indian Forester 52(8): 373-390, 1926.

An outline of methods.

**Harter, L[eonard] L[ee], & Whitney, W[ill] A[lvah]**

Masking sweet potato mosaic. Phytopathology 19(10): 933-942, 1929; (Rev. Appl. Mycol. 9: 267, 1930.)

The author reports the masking on new growth at 38 degrees C.

**Hartley, Carl Pierce**

Pale dwarf disease of plant (*Arachis hypogaea*). Phytopathology 17: 217-225, 1927.

A report on a disease found in Java. The author has found this disease in seedlings grown from seed from Africa.

-----, **Haasis, Ferdinand W[ead]**

Brooming disease of black locust (*Robina pseudoacacia*). Phytopathology 19(2): 163-166, 1929.

A description of a disease resembling peach yellows but the authors do not give any proof that it is caused by a virus.

-----  
A Brooming disease of *Robina pseudoacacia* transmitted by grafts. Phytopathology (Abstract) 23(1): 13, 1933.

**Harvey, R[oney] B[eecher]**

Hydrogen-ion changes in the mosaic disease of tobacco plants and their relation to catalase. Journ. Biol. Chem. 42: 397-400, 1920.

**Haskell, Royal J[oyslin], & Martin, George H[amilton]**

Summary of plant disease in the United States in 1918. II Diseases of field and vegetable crops. U. S. D. A. Br. Plant Industry. Plant Disease Bull. Suppl. 2: 42-83, 1919.

-----  
The Fiji disease of sugar cane. Trop. Agric. (Ceylon) 56: 381-383, 1921.

-----, **Wood, Jessie I[da]**

Diseases of cereals and forage crops in the United States in 1928. U. S. D. A. Plant Disease Reporter Suppl. 71: 259-323, 1929. (Rev. Appl. Mycol 9(2): 93, 1930.)

-----, & Archer, William A[ndrew]

Salsify yellows. U. S. D. A. Plant Disease Reporter **13**:139-140. (Rev. Appl. Mycol. **9**:224, 1930.)

-----  
United States of America: Plant Disease survey notes. International Bull. Plant Protect. **3**:179-180, 1929. (Rev. Appl. Mycol. **9**:288; 1930.)

Reports celery yellows caused by aster yellows virus and transmitted by *Cicadula seznottata*.

-----, & Wood, Jessie I[da]

Diseases of plants in the United States in 1929. U.S.D.A. Plant Diseases Reporter Suppl. **75**.

**Handuroy, P.**

Les untravirus. Deuxième Congr. Intern. Path. Comp. (Paris) Rpts. **1**:321-338, 1931.

**Hause, H.**

Transfer of variagation from scion to stock. Gard. Chron. **1893**:849, 1893.

It refers to Horse chestnut.

**Hawley, I[ra] M[yron]**

Relation between curly-top and beet leaf hopper. Utah Agric. Expt. Sta. Misc. Pub. No. **3**. 1927.

**Hayes, T. R.**

Groundnut rosette disease in the Gambia. Trop. Agric. (Trinidad) **9**(7):211-217, 1932.

A review of our knowledge of the subject with the results of studies of weed carriers.

**Heald, F[rederick] D[e Forest]**

Division of Plant Pathology. Washington Agric. Expt. Sta. Bull. **245**:47-50, 1930.

The works of L. K. Jones are reported in regard to the rate of spread of tomato streak. Brief notes on other virus diseases are given.

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Forty-second Annual Report Washington Dept. Agric. for the fiscal year ending June 30, 1932. Washington Agric. Expt. Sta. Bull. **275**, 34 p., 1932.

Account of studies on little leaf or rosette of apple, peach and cherry, and latent veinbanding viruses of potato.

-----, & Burnett, G.

A virus disease of perennial delphiniums. Bull. Amer. Delphiniums Soc. 2(2):14-21, 1934.

**Hédin, L[ouis]**

Culture du manioc en côte d'Ivoire; observations complémentaires sur la mosaïque. (Culture of manioc in Ivory Coast supplementary observation on mosaic.) Rév. Bot. Appl. Agri. Trop. 11:558-563, 1931.

**Hedlund, [Johan] T[eodor]**

(Some observations on the leaf-roll disease of the potato) Tidskr. Landtman. 31:512-515, 532-541, 1910. (Abstract: in Bot. Centralbl. 114(22):567-568.) 1910.

-----  
 Über die gewöhnlichsten krankheiten der kartoffel. (About the common diseases of potato.) Tidskr. f. Landtman, 15 p., 1913.

**Heim, Roger**

Maladies á virus et maladies bactériennes des plantes coloniales; état actuel de la question. (Virus and bacterial disease of colonial plants; actual state of the question.) Cryptog. Exotique, (Paris) 4(2):104-110, 1931.

**Hein, I[llo]**

Changes in plastids in variegated plants. Bull. Torrey Bot. Club. 53:411-418, 1926.

The author makes a study of a number of plants and says:—"In all these cases it would seem that the spotting must be caused by a chlorophyl destroying agent which spreads radially and disorganizes the plastids as it penetrates from cell to cell."

**Heintzel, K[urt Gustav] Emil**

Contagiose Pflanzenkrankheiten ohne Microben unter besonderer Berücksichtigung der Mosaikkkrankheit der Tabakablätter. (Contagious plant diseases not bacterial on peculiar contact transmission of the mosaic disease of tobacco leaves.) Inang Diss. Univ. Erlangen, p. 1-45, 1900.

**Hell, W. F. van**

Onderzoekingen over Ziekten van Lilies. (Investigations on lily diseases.) Thesis Univ. of Utrecht, 116 pp., 1931.

The author records yellow flat in Holland on *L. longiflorum* var. *giganteum* and *formosum* and mosaic on *L. longiflorum*, *L. aurantum* and *L. speciosum*.

**Ienderson, L[ouis] F[ourniquet]**

Tomato blight. Idaho Agric. Expt. Sta. Ann. Rpt. 1904:1-55, 1905.

**Ienderson, R[obert] G[ordon]**

Transmission of tobacco ring spot by seed of *Petunia*. Phytopathology 21(2):225-229, 1931.

The author discusses the subject briefly, giving results of experimental work.

**-----, & Wingard, S[amuel] A[ndrew]**

Further studies on tobacco ringspot in Virginia. Journ. Agric. Res. 43(3):191-207, 1931.

Natural infections on many plants have been reported. The symptoms differ from true ring spot in severity. It has been suggested that this is due to attenuation of the virus. Jimson weed and cat-aloupe are natural hosts. Thermal death point is between 60° and 70° C. The virus is readily inactivated by desiccation. The paper contains much other valuable data.

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Increasing the resistance of tobacco ring spot virus to ageing *in vitro* by use of carbolic acid. Phytopathology (Abstract) 23(1):14-15, 1933.

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Effect of air temperature on tobacco ring-spot infection. Phytopathology (Abstract) 24(1):10-11, 1934.

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Occurrence of tobacco ring-spot-like viruses in sweet clover. Phytopathology 24(3):248-256, 1934.

Discussion of the natural occurrence of ring-spot-like viruses on sweet clover. The authors reports a new virosis of sweet clover, describing its symptoms. The virus is infectious on tobacco, producing symptoms of the necrotic-pattern type but distinctly different from the symptoms of ring spot.

**Ienderson, W. J.**

Indexing as a control measure for the yellow dwarf disease of onion. Phytopath. (Abstract) 20(1):115, 1930.

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Varietal susceptibility, distribution and control of yellow dwarf onion. Phytopathology (Abstract) 21(1):123, 1931.

-----  
Studies of the properties and host reactions of the onion to the yellow dwarf virus. Phytopathology (Abstract) 22(1):11, 1932.

**Henning, E[rnst Johan]**

Kort översikt över vitktigare smittosamme sjukdomar hos potatisen. Stockholm: Wilhelmssons Boktr. 28 p., 1915.

**Herbert, D. A.**

Bitter pit of apples. The crushed cell theory. *Phytopathology* 12(10): 489-491, 1922.

Discussion of the theory. Written before the cause was known.

**Heribert-Nilsson, N[ils]**

Sortshesistens och lokalinfektionsfrihet med avseende på bladrollsjukan hos potatis. (Varietal resistance and local freedom from infection in connection with potato leaf-roll.) *Weibull Arsbok* 21: 30-33, 1927.

**Hernández, Adrián**

Yellow stripe disease of cane in the Philippines. *Sugar Central & Planters' News* 1: 36, 1920.

-----  
Mosaic diseases. *Philippine Islands Br. Agric. Ann. Rpt.* 1923: 167-168, 1924.

**Hernández Torres, C.**

Control del "mosaico" o "rayas amarillas" de la caña de azúcar. (Control of "mosaic" or "Yellow stripe" disease of sugar cane.) *Rev. Agric. Com. & Trab. Cuba* 10(4): 16, 1928.

**Hertzsch, Walther**

Beiträge zur infektiösen Chlorose. (Contribution on infectious chlorosis.) *Zeitschr. für Bot.* 20(2-3): 65-85, 1927.

Two infectious diseases of *Abutilon* which have been confused by earlier writers.

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Infektiöse chlorosen. (Infectious chlorosis.) *Der Züchter* 2(7): 196-199, 1930.

The author reports two forms of infectious chlorosis A & B in *Abutilon* and other Malvaceae.

**Heuberger, J. W., & Moyer, A[ndrew] J.**

Influence of mosaic infection on tomato yields. *Phytopathology* 21(7): 745-749, 1931.

Tabulated results of experiments are given. Late infections cause less losses than early infections.

-----, & Norton, J. B. S.

Water loss in tomato mosaic. *Phytopathology (Abstract)* 23(1): 15, 1933.

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The mosaic disease of tomatoes. Maryland Agric. Expt. Sta. Bull. **345**: 447-486, 1933.

Popular.

**Hiltner, L[orenz]**

Einige Bemerkungen über die Blattrollkrankheit der Kartoffeln. (Some observations on the leafroll disease of potatoes.) Prakt. Bl. Pflanzenb. u. Pflanzensch. **4**: 25-30, 1908.

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Ueber den Zusammenhang der Blattrollkrankheit der Kartoffel in Bayern. (The actual state of ring and leaf roll disease of potatoes in Bayern.) Prakt. Bl. Pflanzenb. u. Pflanzensch. **6**: 86-87, 1908.

-----, & **Gentner, G[eorge]**

Ueber den Zusammenhang der Blattrollkrankheit der Kartoffel mit der Stärkeanhäufung in ihren Blättern. (On the relation of leafroll disease of potato with the starch accumulation in its leaves.) Prakt. Bl. Pflanzenb. u. Pflanzensch. **16**: 138-141, 1918.

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Versuche über die Ursachen der Blattrollkrankheit der Kartoffel. II Weitere Beobachtungen über die "Stärkeschoppung" in Blattrollkranken Kartoffelständen. Praktische Blätter für Pflanzenbau und Pflanzenzucht. (München) **17**: 15-19, 39-49, 1919.

**Himmelbaur, Wolfgang.**

Die Blattrollkrankheit der Kartoffel. (The leaf-roll disease of the potato.) Wiener. Landw. Zeitg. **74**: 43-44, 1924.

**Hind, R[obert] R[enton]**

Toledo cane, a mosaic-immune variety. Sugar Central & Planters' News **4**(3): 105-107, 1923. (Rev. Appl. Mycol. **2**: 468, 1923.)

**Hinson W[alter] M., & Jankins, E[dward] H[opkins]**

The management of tobacco seed beds. Connecticut Agric. Expt. Station. (New Haven) Bull. **166**, 1910.

A brief reference to calico (mosaic) in the seed beds.

**Hockey, J[ohn] Fred[erick]**

Report of the Dominion Laboratory of Plant Pathology. Canada Dept. Agric. St. Catherine, Ontario Div. Bot. Rpt. **1922-23**: 32-43, 1923.

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Mosaic and leaf curl of the cultivated raspberry. Canada Expt. Farms Circ. **1**, 4 p., 1923.

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The control of raspberry mosaic. Phytopathology (Abstract) **13(6)**: 292, 1923.

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The control of spread of mosaic of potatoes by the use of nicotine dust. Rpt. Dom. Bot. **1927**: 205, 1928.

**Hodgson, C. M.**

Spiked sandal wood. Indian Forester **44**: 66-71, 1918.

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Spike disease of sandal. Indian Forester **44**: 325-334, 1918.

“I write to record my opinion that spike is not caused by fire, *Zyzyphus*, *Lantana* (*L. Camara*) or any other of the environment but an internal ailment due to some germ or to some pathological condition.”

**Hodson, W[illiam] E[dgar] H[umphreys]**

Narcissus pests. Min. Agric. & Fisheries Bull. **51**, 1932.

**Hoffman, M.**

Plant diseases. Jahresber. Land. **24**: 203-210. 1909

**Hoggan, Ismé A[ldyth]**

Cytological studies on virus diseases of solanaceous plants. Journ. Agric. Res. **35(7)**: 651-672, 1927.

This paper gives a brief review of the literature and the results of a very thorough study on the virus diseases of a number of solanaceous plants. Special attention is given to the X-bodies and other materials. “It is believed that the evidence presented in this paper is on the whole in favor of the view that the X-bodies are not of the nature of a causal organism.”

-----, & **Johnson, James**

“Not Guilty” is the verdict against peach aphids. Wisconsin Agric. Expt. Sta. Bull. **405**: 115-116, 1929.

Based on field observations and experimental tests the authors found out that *Myzus persicae* is not a vector of tobacco mosaic disease.



The peach aphids (*Myzus persicae* Sulz) as an agent in virus transmission. *Phytopathology* **19**(2):109-123, 1929.

*Myzus persicae* transmitted cucumber virus to tobacco and other solanaceous plants and from tobacco to tobacco, but it did not transmit tobacco mosaic from tobacco to tobacco.

Transmission of cucumber mosaic to spinach. *Phytopathology* **20**(1):103-105, 1930.

Virus from mosaic cucumbers was transmitted to spinach by *Myzus persicae* and *Macrosiphum solanifolii*. The symptoms resembles those of spinach blight.

Aphid transmission of plant viruses. *Phytopathology* (Abstract) **20**(1):133, 1930.

Studies on aphid transmission of plant viruses. *Journ. Bact.* **19**(1):21-22, 1930. (Rev. *Appl. Mycol.* **9**:413, 1930.)

Greenhouse experiments demonstrated that: (1) *Myzus pseudo-solani* and *Macrosiphum solanifolii* can transmit tobacco mosaic virus from tomato to other solanaceous hosts, but cannot transmit it to tobacco. (2) Can transmit cucumber mosaic virus from tobacco and tomato. (3) *Myzus circumflexus* can transmit cucumber mosaic from tobacco and tomato but cannot transmit tobacco mosaic from tobacco.

Further studies on aphid transmission of plant viruses. *Phytopathology* **21**(2):199-212, 1931.

Studies on aphid vectors were conducted on different species of aphids to determine their ability to transmit the viruses of ordinary tomato mosaic. Evidence showed that aphids are unlikely to be responsible for any dissemination of ordinary tobacco mosaic, so far as tobacco is concerned.

Some factors involved in aphid transmission of the cucumber-mosaic virus to tobacco. *Journ. Agric. Res.* **47**(9):689-704, 1933.

Report of the results of experiments obtained, given in detail. The aphid under study was *Myzus persicae*.

Some virus affecting spinach, and certain aspects of insect transmission. *Phytopathology* **23**(5):446-474, 1933.

Results of observations and experiments made by the author in re-

gard to the transmissibility of different viruses on Spinach (*Spinacia oleracea*) e. g. cucumber mosaic, sugar beet mosaic and tobacco ring spot mosaic virus diseases.

**Holden, J. A.**

Spindel-tuber disease. U.S.D.A. Circ. 5:27-28, 1927.

Report of an experiment to determine whether the spindle-tuber disease of potatoes is carried by irrigation water. The experiment gave negative results.

**Hole, R[obert] S[elby]**

Spike disease of sandal. Indian Forester 44:325-334, 1918.

A review of a paper by Venkataraman Ayyar (Indian Forester 44:316-324) defending statements in a previous paper (Indian Forester 44:430.) The disease was probably present before 1898. Believes that trenching experiments should be continued. Injury by fire may be a factor under dry conditions.

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Spike disease of sandal. Indian Forester 44:461-462, 1918.

Criticism of paper by Lushington and a defense of his own opinion.

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Cause of the spike diseases of sandal. (*Santalum album*.)  
Indian For. 43:429-442, 1917. (Bot. Abs. 2:215, 1919.)

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Cause of the spike disease of sandal. Indian Forest 45:133-139, 1919.

Further information of the disease given in previous articles.

**Holland, T. H.**

Plantains and bunchy top. Trop. Agric. (Ceylon) 66(2):125, 1926.

Report of measures of control of the disease, which were unsuccessful.

**Hollins, E.**

Discussing curl or degeneration of potatoes. Trans. Soc. Encouragement of Arts. Manuf. and Commerce 8, 1790. Read the 20th October, 1789.

Historical value.

**Hallowell, E. A., Monteith Jr., John., & Flint, W. P.**

Leaf hopper injury to clover. Phytopathology (Abstract) 17(1):58, 1927.

Not due to a virus, but the symptoms are similar.

**Hollrung, Max**

(Annual Report on Plant Diseases.) Jahresber. Pflanzenkrank. 12(8):356, 1909.

**Holmes, Francis O[liver]**

Monochromatic light photography in the study of mosaic disease. *Phytopathology* (Abstract) **18**(1):154, 1928.

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Accuracy in quantitative work with tobacco mosaic virus. *Bot. Gaz.* **86**(1): 66-81, 1928.

A description, a method and the result of the experimental work.

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Accuracy in comparing various concentrations of tobacco mosaic virus. *Phytopathology* (Abstract) **18**(1):132, 1928.

Describes method of inoculation with needles and experimental results.

-----  
Cytological study of the intracellular body characteristic of *Hippeastrum* mosaic. *Bot. Gaz.* **86**(1): 50-58, 1928.

The author reports that no nucleus was found in the bodies but chondriosome were found. "Whether the body represents a stage in a foreign organism, a mass of plant cell cytoplasm containing virus, or a mass of the plant cell cytoplasm not immediately in contact with virus but stimulated by the diseased conditions is not known."

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Ultra-violet light photography in the study of plant virus. *Bot. Gaz.* **86**(1): 59-65, 1928.

Gives results of photographic experiments for purpose of finding special structure in mosaic plants. The results were negative.

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Local lesions in tobacco mosaic. *Bot. Gaz.* **87**(1): 39-55, 1929. (Contri. Boyce Thompson Inst. **1**: 504-520, 1929.)

Gives the results of the inoculation of a number of species of *Nicotiana* with common tobacco mosaic. Five species developed lesions. Gives a "standardized method for using *N. glutinosa* as a test plant for measuring the concentration of mosaic virus.

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Inoculating methods in tobacco mosaic studies. *Bot. Gaz.* **87**(1): 56-63, 1929. (Contr. Boyce Thompson Inst. **1**: 521-528, 1929.)

This paper gives the results of several methods of mechanical inoculation and recommends the application of the virus to the surface before making the wounds.

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Local symptoms of mosaic in the leaves of some *Nicotiana* species. *Phytopathology* (Abstract) **19**(1): 92-93, 1929.

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Local and systemic increase of tobacco mosaic virus. Amer. Journ. Bot. **17**(8):789-805, 1930. (Boyce Thompson Inst. Contrib. **2**(10):563-579, 1930.)

By means of measurements the author studies the concentration of virus in relation to local lesions and its spread in the plant.

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Local lesions of mosaic in *Nicotiana tabacum* L. Boyce Thompson Inst. Contrib. **3**(2):163-171, 1931.

Local lesions of mosaic in *Nicotiana tabacum* L. are described and discussed.

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Local lesions of mosaic in *Nicotiana tabacum*. Phytopathology (Abstract) **21**(1):119, 1931.

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Movement of mosaic virus from primary lesions in *Nicotiana tabacum* L. Boyce Thompson Inst. Contr. **4**(3):297-322, 1932.

A thorough description of the author's observations of the movement of the mosaic virus in primary lesion in *Nicotiana tabacum* L. with description of symptoms produced by artificial inoculations.

-----  
Symptoms of tobacco mosaic disease. Contr. Boyce Thompson Inst. **4**(3):323-357, 1932.

The author describes primary and secondary symptoms resulting from inoculating tobacco mosaic virus into *Nicotiana*, *Solanum*, *Capsicum*, *Lycopersicum*, *Datura*, *Petunia*, *Nicandra*, *Lycium*, *Hyoscyamus*, *Marytynia* and *Phaseolus*. The descriptions include a number of symptoms not recorded by previous workers.

-----  
Masked strain of tobacco-mosaic virus. Phytopathology (Abstract) **24**(1):11-12, 1934.

#### **Holmes Smith, (A) E.**

Spotted wilt disease of tomatoes. Gard. Chron. **94**(2445):350, 1933.

Account of the occurrence of an outbreak of spotted wilt disease of tomatoes in Manchester (England). Description of the effect of the disease on the plant and on the crop. The author suggests the applications of calcium cyanide or the dusting of the foliage with naphthalene to control *Thrips tabaci* the vector of the disease.

#### **Hoog, J.**

The breaking of tulips. Gard. Chron. **94**(2452):471, 1933.  
Brief historical note of this disorder in tulips.

**Hopkins, J[ohn] C[ollier] F[rederick]**

Mosaic disease of tobacco. Rhodesia Agric. Journ. **25**:188-194, 1928.

A popular paper.

Leaf spotting of tobacco caused by mosaic. Rhodesia Agric. Journ. **26**(9):912-916, 1929. (Rev. Appl. Mycol. **9**(2):138, 1930.)

A description of this type of mosaic on tobacco.

Plant Pathology in Southern Rhodesia during the year 1930. Rhodesia Agric. Journ. **28**(4):384-389, 1931.

Masked tobacco mosaic is reported. Also ring spot virus disease of tobacco as a new record.

Leaf curl of tobacco in Southern Rhodesia. Rhodesia Agric. Journ. **29**(9):680-686, 1932.

This paper gives the results of experimental studies. The disease is carried by white flies (*Aleurodidae*).

**Hori, S.**

(Material for the study of dwarf diseases.) Journ. Plant Protect. **7**:667-671, 1920; **8**:117-120, 1921.

(Chlorosis or mosaic disease of cucurbits.) Agric. World **17**(16):22-30, 1922.

**Horne, A[rthur] S[amuel]**

The symptoms of internal disease and sprain. Journ. Agric. Sci. **3**:323, 1910.

On the potato leaf blotch and leaf curl. Journ. Roy. Hort. Soc. (London) **36**(3):618-623, 1911.

Blotch and streak in potatoes. Journ. Roy. Hort. Soc. (London) **39**(3):607-614, 1914.

**Horne, W[illiam] T[itus], & Parker E[dwin] R.**

The avocado disease sun blotch. Phytopathology (Abstract) **20**(10):852, 1930.

Record of a disease of avocado in California with characteristics of an infectious chlorosis.

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The avocado disease called sun blotch. *Phytopathology* **21**: 235-238, 1931.

The disease is thought to be an infectious chlorosis.

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The avocado sun-blotch disease. California State Dept. Agric. Mo. Bull. **20**(7): 447-454, 1931.

Popular article describing the disease. Practical methods of control are suggested.

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Avocado diseases in California. *Phytopathology* **22**(1): 12-13, 1932.

Abstract in which the author states that "*Chlorosis* and *little leaf* apparently parallel similar diseases of citrus. *Sun blotch*, is an infectious disease."

#### Horsfall, J[ohn] L[ouis]

The effects of feeding punctures of Aphids on certain plant tissues. Penn. Agric. Expt. Sta. Bull. **182**, 1923.

Gives the results of histological studies by which the author was able to follow the course of the probosis in the tissue of the plant.

#### Howard, Albert

Spike disease of peach trees, an example of unbalanced sap circulation. *Indian For.* **45**: 611-617, 1919.

The author believes that sandal spike is similar to peach spike and that it is due to the imperfect union of the root haustoria with the host.

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Agriculture and Science. *Agric. Journ. of India.* **21**(3): 171-182, 1926. (*Sugar News* **7**(6): 381-386; (7): 471-477; (8): 537-543, 1926.)

#### Howdeniensis

On the curl in potatoes. *Young's Ann. Agric.* **43**: 595-596, 1805.

#### Howitt, John E[aton]

Raspberry yellows and cane blight. *Canad. Hort.* **36**(10): 237-238, 1913.

-----, & Stone, R[oland] E[lisha]

A troublesome disease of winter tomatoes. *Phytopathology* **6**(2): 162-166, 1916.

This is evidently a virus disease but was not recognized as such at the time of the publication of this paper.

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Botany. Ontario Agric. Col. & Expt. Farms, Ann. Rpt. 1918.  
44:19-21, 72-78, 1919.

Brief references to mosaic diseases. Results of field studies.

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Some observations made in inspecting for leaf-roll and mosaic.  
Phytopathology (Abstract) 10(5):316, 1920.

**Hunger, Friedrich W[ilhelm] T[obias]**

Die Mosaiek-ziekte by Deli Tabak. (The mosaic disease on Deli Tobacco.) Deel. 1 Meded. unit. S' Lands. Plantentuin 63, 104 p., 1902.

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Een voorloopige verclaring optreden het veelvuding optreden der Mosaiekziekte bij Sumatratabak. (A preliminary statement showing the multieity manifested in mosaic disease of Sumatra tobacco.) Tijds. Nijverheid & Landvouw in Ned-Indië 67:225-237, 1903.

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Bemerkung zur Woods' schem Theorie über die Mosaikkrankheit des Tabaks. (Remarks on Woods' theory upon the mosaic disease of tobacco.) Bull. Inst. Bot. Buitenzorg 17:1-9, 1903.

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Het Rupsen-Toeken by tabak in verband met het later optreden der mosaiek-ziekte. Teysmannia 16:632-638, 1903.

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(On the spreading of mosaic disease (Calico) on a tobacco field.)  
Inst. Bot. Buitenzorg Bull. 17:10-16, 1903.

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Over de verspeding der mosaiekziekte op een tabaksveld. (On the spreading of mosaic disease on a tobacco field.) Handl. v. h. 7 Vlamsch Natuur en Geneeskunding Congress p. 1-14, 1903.

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Die verbreitung der Mosaikkrankheit infolge der Behandlug des Tabaks. Centralbl. f. Bakt. 11:405-408, 1904.

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Over den aard der Cesmettelykheid der Mozaiekziekte der Tabaksplant. Handl. v. h. 8. Vlaamsche Natuur en Geneeskundink Congress 3:45-50, 1904.

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Infloed van het verspenen van tabaks bibit. Korte Berichten  
Int's Lands. Plantentuin. Teymannia 15:58-64, 1904.

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Neue Theorie zur Aetiologie die Mosaikkrankheit des Tabaks.  
Ber. D. Bot. Ges. 23(8):415-418, 1905.

A brief, preliminary paper giving the author's theory of 'physiological catalytic' action. Believes the mosaic of tobacco is due to a toxin which develops in the cells of the plant.

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Untersuchungen und Betrachtungen über die Mosaikkrankheit  
der Tabakspflanze. Ztschr. Pflanzenkrank. 15(5):257-311,  
1905.

A more extensive paper than the proceeding which reviews the subject to date and reaffirming his opinion that the disease is due to an unorganized ferment which is different from an enzyme.

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Onderzoekingen en Ceschouwingen over de mosaikziekte der  
tabakspplant. (Investigations and considerations on the mo-  
saic disease of the tobacco plant.) Amsterdam 1906.

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Beschaduwng als prophylaxis tegen de Mosaikziekte der Tabak.  
Mededeel. Dept. Landbouw. 3:62-68, 1907.

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Die Verbreitung der Mosaikkrankheit infolge der Behandlung  
des Tabaks. Centralbl. f. Bakt. 2(11):405-408, 1908.

**Hungerford, Cha[rle]s W[illiam]**

Leaf-roll, mosaic and certain other related diseases in Idaho.  
Phytopathology 12(3):133-139, 1922.

This is a discussion of several virus diseases in Idaho, giving their history

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Preliminary results of experiments with leaf-roll and mosaic  
in Idaho. Phytopathology (Abstract) 13(11):511-512, 1923.

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Western yellow tomato blight. Idaho Agric. Expt. Sta. Bull.  
131, 71 p., 1923.

-----, & **Ralder, John Milford**

Mosaic and leaf-roll of potatoes in Idaho. Phytopathology  
(Abstract) 14(2):123, 1924.



....., & Dana, B[liss] F.

Witches' broom of potatoes in the Northwest. *Phytopathology* 14(8): 372-383, 1924.

A very complete discussion of the symptoms and nature of the disease based on observations and studies.

-----  
A new virus disease of *Delphinium* in Idaho. U.S.D.A. Plant Disease Reporter 17(1): 5, 1933.

**Huntley, F[red] A.**

Tomato culture. Idaho Agric. Expt. Sta. Bull. 34:108-117, 1902.

**Husain, M. Afzal**

Leaf curl in cotton. *Nature* 126(3190): 958, 1930.

Short note about the occurrence of this disease in Punjab, India.

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Leaf-curl in cotton and other plants. *Nature*, 130(3278): 312, 1932.

The disease is common in potato, tomato and pepper (*C. annuum*.)

**Hutchins, L[ee] M[ilo]**

Peach orchards in Georgia menaced by phony disease. U. S. D. A. Yearbook, 1927: 499-503, 1928.

A brief statement concerning the spread of the disease and its effects on the fruit.

-----  
The cause and contagious nature of the phony disease of the peach. Proc. Ann. Meet. Georgia State Hort. Soc. 53: 25-32, 1929.

Popular discussion.

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Phony disease of the peach. *Phytopathology* (Abstract) 19(1): 107, 1929.

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The phony disease of the peach. Mississippi State Plant Board Quart. Bull. 10(1): 1-11, 1930.

A review of the history of the disease and its geographical distribution in Southern United States.

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The phony disease of the peach. *Journ. Econ. Ent.* 23(3): 555-562, 1930. (*Rev. Path. Vég.* 17(8-9): 384, 1930.)

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Peach mosaic; a new virus disease. *Science* n.s. **76** (1962):  
123, 1932. (*Phytopathology* (Abstract) **23**(1):17, 1933.)  
The first record of this new disease.

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Identification and control of the phony disease of the peach.  
*Georgia Office of the State Entom. Bull.* **78**, 55 p., 1933.

Extensive considerations about the disease in the State of Georgia.  
Description of the disease and damages caused, methods for identifica-  
tions of the malady. The author states also that circumstantial evi-  
dence points to the peach borer *Aegeria exitiosa* as the insect vector  
of the virus. As the only method of control he recommends the de-  
struction of infested trees.

**Hutson, J. C., & Malcom, Park**

Investigation of the bunchy top disease of plantains in Ceylon.  
*Trop. Agr. (Ceylon)* **75**(3):129-140, 1930.

A review and description of this disease and experiments demon-  
strating that it is carried by *Pentalonia nigronervosa*. Root disease  
is not necessarily associated with bunchy top. Eradication is the most  
satisfactory method of control.

**Iachevskü, A.**

Kratkü obzor sovremennogo sostoianüa uchenüa o vyrozhdenü  
u rastenii. (A brief review of the present status of the study  
of degeneration in plants.) *Materialy po mikologü i Fito-  
patologii* **7**(1):195-207, 1928.

**Ichitkawa, Nobujiro**

On the similarity of mulberry dwarfs and peach yellows in  
regard to their symptoms and cause. *Bot. Mag. Tokyo*, **9**:  
82-89, 1896.

**Ikeno, J.**

Studies über eimen eigentümlichen Fall der infektiösen Buntblät-  
trigkeit bei *Capsicum annum*. *Ztschr. Wis. Biol. E. Planta*  
**11**(2):359-367, 1930.

**Illingworth, J[ames] F[ranklin]**

Yellow spot of pineapple in Hawaii. *Phytopathology* **21**(9):  
865-880, 1931.

A new disease which is very important. It is carried by thrips.

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Preliminary report on evidence that mealy bugs are an im-  
portant factor in pineapple wilt. *Journ. Econ. Ent.* **24**(4):  
877-889, 1931.

Summary of four years' work on the subject in Hawaii. The author presents evidence that pineapple wilt is transmitted by *Pseudococcus brevipes*, Ckll. a mealy bug which infects the pineapple in Hawaii. He recommends biological control.

**Ito, S.**

(Diseases of potatoes with special reference to the virus diseases.) Govern. Hokkaido Bur. Indust. Agric. Bull. **32**, 24 p., 1930.

**Iwanowski, D**[mitri Josiphowitzch Valerian Viktorowitch]

Rjabucha bolesen tabaka, eja pritschini i sielstwo borbi snejen (Die Pockenkrankheit der Tabaspflanze.) (The spot disease of tobacco plant.) Mem. Acad. Imp. Sci. St. Petersburg **7** (37) : 23, 1890.

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 Ueber zurie krankheiten der tabakspflanze. (About two tobacco diseases.) Bull. de l'Acad. Inspér d. Sci. St. Petersburg **2** (3) : 67-70, 1892. (Abstracted in Beihefte Botanisches Centb. Jahrg. **3** : 266-268, 1893.)

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 Ueber die mosaikkrankheit der tabakspflanze. (About the mosaic disease of tobacco plant.) Centrabl. f. Bakt. **5**(8) : 250-254, 1899.

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 Ueber die mosaikkrankheit der tabakspflanze. (About mosaic disease of tobacco plant.) Centrabl. f. Bakt. **7** : 148, 1901.

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 Die mosaik und pockenkrankheit der tabakspflanze. (Mosaic and the spot disease of tobacco plant.) Ztschr. f. Pflanzenkh. **12**(4) : 202-203, 1902.

Discusses differences between mosaikkrankheit and pockenkrankheit.

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 Ueber die mosaikkrankheit der tabakspflanze. (About the mosaic disease of the tobacco plant.) Ztschr. Pflanzendrank. **13**(1) : 1-14, 1903. (Bot. Centbl. 40, 1903.)

An extensive study of the disease with references to the work of previous workers. He believed the disease to be due to bacteria but failed to isolate an organism. He gives the results of inoculation experiments, filtering and observations.

**Iyengar, A. V. V.**

Contributions to the study of spike disease of sandal (*Santalum album* Linn.) II & III. Journ. Indian Inst. Sci. **11A**(9) : 97-109, 1928.

Contributions to the study of spike disease of sandal. (*Santalum album*, Linn.) Part X. Seasonal Studies on healthy and partially spiked trees. Journ. Indian. Inst. Sci. **12A**(20): 295-305, 1929.

This paper gives the results of chemical analyses of the leaves made during the period of the development of the disease. Also of healthy leaves during the same period.

**Iyengar, B. Narasimha**

Spike disease of sandal. Mysore Dept. Agric. Ann. Rpt. **1922-23**: 10-12, 1923.

A brief record of studies on sandal wood.

**Jackson, A[lbert] B[ruce]**

A possible cause of spike in sandal. Indian Forester **45**: 635, 1919.

Suggests that the disease may be caused by excessive parasitism of sandal on sandal.

**Jackson H[erbert] S[pencer] & Osner, G[eorgie] A[din]**

Potato diseases in Indiana. Indiana Agric. Expt. Sta. (Perdue Univ.) Circ. **71**, 16 p., 1917.

**Jackson, L. W. R., & Hartley, Carl**

Transmissibility of the brooming disease of Black Locust. Phytopathology **23**(1): 83-90, 1933.

Detailed report of the authors in the transmissibility of brooming disease of *Robinia pseudacacia*. The disease is considered to be caused by a virus. Attempts to transmit it by budding gave negative results, although it was successfully transmitted by grafting.

**Jaczwski, A[rthur] L[ouis]**

(Degeneration diseases of the potato according to the results of the investigations made in 1924.) Central Potato Co-operation Union, Moscow, 65 p., 1925.

(Witches' broom of potato.) Materials for Mycology & Phytopathology **5**(2): 117-128, 1926.

Mesures pratiques contre les maladies de la dégénérescence. (Practical measures against the degeneration diseases.) Défense des plantes, **4**(1): 62-77, 1927.

(A summary of the present status of the study of degeneration diseases in plants.) Mat. Mycol. & Phytopath., Leningrad, **7**: 195-207, 1928.

(Ring spot of tobacco leaves.) Ann. Inst. Expt. Agron. (Leningrad) 6: 61-65, 1928. (Rev. Appl. Mycol. 9: 347, 1930.)

A report of a ring spot which the author believes to be the same as the ring spot in the United States.

**Jagger, I[van] C[laude]**

Experiments with the cucumber mosaic disease. Phytopathology 6(2): 148-151, 1916.

Gives the results of inoculation experiments and demonstrates that the disease is carried by *Aphis gossypii* Glover.

Two transmissible mosaic diseases of cucumber. Phytopathology (Abstract) 7(1): 61, 1917.

Host of the white pickle mosaic disease of cucumber. Phytopathology 8(1): 32-33, 1918.

A brief note giving the hosts for this virus.

Mosaic disease of cucurbits. Phytopathology (Abstract) 8(2): 74-75, 1918.

Transmissible mosaic disease of lettuce. Journ. Agric. Res. 20(10): 737-740, 1921.

Symptoms and transmission experiments.

**Jaguenaud, G.**

Recherches sur la dégénérescence de la pomme de terre. (Researches on the degeneration of the potato.) Compt. Rend. Acad. Agr. France. 17(10): 318-322, 1931.

(Th influence of the soil and its position on the degeneration of th potato.) Compt. Rend. Acad. Sci. 193: 582, 1931.

**Janse, J. M.**

Proeve eener verklaring van sereh verschijn selen. Meded uit's Lands Plantentuin te Buitenzorg, 8: 1-39, 1891.

**Janssen, J. J.**

Invloed der bemesting op de gezondheid van de aardappel. (Influence of manuring on the health of the potato.) Tijdschr. Plantenziek. 35(5): 119-151, 1929.

This paper is devoted primary to the relation of soils and fertilizers to the virus diseases.

**Jarrett, Phyllis H.**

Streak. —a virus disease of tomatoes. *Ann. Appl. Biol.* **17**(2): 248-259, 1930.

A comparison of this disease with a disease produced by inoculation with a mixture of juice from mosaic potato and mosaic tobacco plants. The author concludes that the glass house streak of tomato does not contain potato virus. Tobacco mosaic and tomato streak appear to be due to a single virus.

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The role of *Thrips tabaci* Lindeman in the transmission of virus diseases of tomato. *Ann. Appl. Biol.* **17**(3): 444-451, 1930.

After experimentation to show the role of *Thrips tabaci* Lindeman in the transmission of virus disease of tomato, it is concluded that it does not transmit the disease under all conditions.

**Jehle, R[obert] A[ndrew]**

Disasterous effects of mosaic on the McCormick potato. *Maryland Agric. Expt. Sta. Bull.* **282**: 215-219, 1926.

A popular paper giving valuable data.

**Jensen, H[jalmer]**

Ueber die Bekämpfung der Mosaikkrankheit der Tabakpflanze. (About the control of mosaic disease of the tobacco plant.) *Contrabl. f. Bakt.* **15**: 440-445, 1906.

-----, et al.

(Pathology and physiology of tobacco in the Crown Lands.) *Proefstat. Vorsteland, Tabak* (Dutch East Indies). *Meded.* **5**: 7-78, 122-130, 137, 197-198, 1913.

A record of the work of Raciborski and Jensen for the years 1898-1911.

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Enige onderzoekingen over mozaikziekte bij de tabac. (Some investigations on mosaic disease of tobacco.) *Meded. Proefstat. Vorsteland. Tabak* **33**: 59-66, 1918.

The author reports that diseased plants may produce new foliage which does not show symptoms but this is not a proof that the plants have recovered.

**Jensen, James H.**

Leaf enation resulting from tobacco mosaic infection in certain species of *Nicotiana L.* *Contr. Boyce Thompson Inst.* **5**(1): 129-142, 1933.

This paper is the result of a study of outgrowths on the lower side of leaves of mosaic *Nicotiana paniculata* and *N. tomentosa*. They did

not occur in plants shaded from direct sun light. Similar outgrowth occur occasionally on *N. tabacum* var. *angustifolia* grown from cutting but not on plants grown from the seeds. These outgrowths sometimes produce palisade cells on the lower surface.

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Isolation of yellow-mosaic viruses from plants infected with tobacco mosaic. *Phytopathology* **23**(12): 964-974, 1933.

The author gives his observations in experimental work and concludes that viruses of yellow mosaic arise during multiplication of tobacco-mosaic virus in infected plants.

**Jiménez Núñez, E.**

Cultivo de la caña de azúcar. (Sugar cane cultivation.) Centro Nal. de Agric. (Argentina) Bull. **6**: 3-24, 1930.

**Jivanna Rao, P. S.**

The cause of spike in sandal. (*Santalum album*) Indian For. **46**: 469-487, 1920. (Bot. Abs. **7**: 173, 1921.)

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The physiological anatomy of the spiked leaf in sandal (*Santalum Album* L.) Indian For. **49**(9): 351-360, 1921. (Bot. Abs. **10**: 285, 1922.)

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The cause of spike disease in sandal (*Santalum album* L.) Indian Sci. Congr. Proc. **11**: 149, 1924.

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The virus theory in relation to spike disease of sandal. Imp. Bot. Confr. (London.) p. 357-359, 1924.

**Jochems, S[arah] C[amelia] J[ohannes]**

Ziekten van Deli—tabak. (Diseases of deli-tobacco.) Meded. Deli Proefstat. Medan Sumatra 2 ser. **43**, 39 p., 1926.

A popular discussion of many diseases, including virus diseases. Exceptionally well illustrated.

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Eene nieuwe virusziekte van Deli-tabak, de Rotterdam B-ziekte. (A new virus disease in Deli-tobacco, the Rotterdam B-disease.) Meded. Deli Proefstat. Medan Sumatra Bull. **26**, 26 p., 1928.

A record of a new virus disease of tobacco under the name of "Rotterdam B-Disease".

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Twee nieuwe virusziekten bij Deli-Tabak (Ringvlekziekte en nerfstreep.) (Two new virus diseases of Deli Tobacco (ring-

spot disease and vein streak.) Deli Proefstat. te Medam, Sumatra Bull. 30, 24 p., 1930.

Description of these two diseases and record of inoculation experiments.

**Jodidi, S[amuel] L[eo], Kellog, E[dward] H., & True, Rodney H[oward]**

Nitrogen metabolism in normal and blighted spinach. Journ. Agric. Res. 15:385-408, 1918.

The diseased plants have a low nitrogen content and a high ammonia content. The authors record a number of differences in chemical content between diseased and healthy plants.

-----, **Moulton, S[tarley] C[henev,] & Mackley, K. S.**

Mosaic disease of spinach as characterized by its nitrogen constituents. Journ. Amer. Chem. Soc. 42:1061-1070, 1920.

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A mosaic disease of cabbage as revealed by its nitrogen constituents. Journ. Amer. Chem. Soc. 42:1883-1893, 1920.  
(Science n. s. 52(1355):588, 1920.)

**Joest, Ernest**

Ueberkannte Ifektionsstoffe. Centralbl. f. Bak. 31:365, 1902.

**Joglar Rodríguez, F[rancisco]**

“El mosaico” enfermedad del tabaco. (“The mosaic” disease of tobacco.) Rev. Agric. Puerto Rico, 25(10):150, 176, 1930.

Popular discussion and description.

**Johnson, A[aron] G[uy,] Mc Kinney, H[arold] H[all,] Webb, Robert W[illiam,] Leighty, Clyde E[vert]**

The rosette disease and its control. U.S.D.A. Farmers' Bull. 1414, 10 p., 1924.

Popular.

**Johnson B[urt] Parker, & Duggar B[enjamin] M[inge]**

Stomatal infection with the virus of tobacco mosaic. Phytopathology (Abstract) 20(1):141-142, 1930.

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Concentration of the virus of the mosaic of tobacco. Amer. Journ. Bot. 21(1):42-53, 1934.

The author precipitated material containing virus with a direct 110 volt current and with several salts. Some carbons can be used to clarify the juice and leave the tobacco in suspension. The author describes a method for preparing highly concentrated suspensions. There is a difference in the protein reaction of juices from healthy and mosaic plants. The positive protein reaction may be due to products associated with the virus.



**Johnson, E[dward] M[arshall]**

Virus diseases of tobacco in Kentucky. Kentucky Agric. Expt. Sta. Bull. 306:289-415, 1930.

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A ringspot-like virus disease of red clover. Phytopathology 23(9):746-747, 1933.

Report and description of a clover disease which shows virus like symptoms.

**Johnson G[eorge] W[illiam]**

The tomato, its culture, uses and history. Gard. Monthly, Vol. I, 1847.

**Johnson, James**

Diseases of tobacco. Wisconsin Agric. Expt. Sta. Bull. 327, 27 p., 1914.

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The relation of air temperature to certain plant diseases. Phytopathology 11(11):446-458, 1921.

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Experimental evidence relating to the nature of the mosaic virus. Phytopathology (Abstract) 12(1):52, 1922.

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The relation of air temperature to the mosaic disease of potatoes and other plants. Phytopathology 12(9):438-440, 1922.

The optimum temperature lies between 14 and 18° C. The symptoms disappear with temperature above 20° C.

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**, & Mulvania M[aurice]**

A new method of obtaining mosaic "virus". Science n. s. 60 (1540):19, 1924.

The extraction of the juice by hydraulic pressure.

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A virus from potato transmissible to tobacco. Phytopathology (Abstract) 15(1):46-47, 1925.

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The transmission of viruses from apparently healthy potatoes. Wisconsin Agric. Expt. Sta. Res. Bull. 63, 12 p., 1925.

This paper gives the results of experiments which tend "to show that at least two different viruses are commonly, if not universally, present in most standard varieties of potatoes".

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Mosaic disease on different hosts. Phytopathology 16(2):141-149, 1926.

The author gives evidence that the mosaic of tobacco due to five viruses which can be differentiated by the reaction of other hosts when inoculated with them. They are: 1—ordinary tobacco mosaic, 2—cucumber mosaic, 3—petunia mosaic, 4—speckled tobacco mosaic, and 5—mild tobacco mosaic.

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The attenuation of plant viruses and the inactivating influence of oxygen. *Science* **64**(1652) : 210, 1926.

The virus of tobacco mosaic may be attenuated by growing the host at 35 to 37° C. The action is more rapid in sandy than in clay soils.

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New virus diseases of tobacco and related plants. *Phytopathology (Abstract)* **16**(1) : 66, 1926.

A record but no description.

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Some points of view on the plant virus problem. *Phytopathology* **16**(10) : 745-751, 1926.

The author emphasizes the need of greater knowledge of the specific properties of the viruses.

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The classification of plant viruses. *Wisconsin Agric. Expt. Sta. Res. Bull.* **76**, 16 p., 1927.

This paper gives the results of extensive experimental work from which the author describes ten viruses. The descriptions are based on the reaction of several host plants, resistance to aging, heat and chemicals.

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The properties and behavior of potato rugose mosaic. *Phytopathology (Abstract)* **18**(1) : 115, 1928.

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Further studies on the attenuation of plant viruses. *Phytopathology (Abstract)* **18**(1) : 156, 1928.

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The classification of certain virus diseases of the potato. *Wisconsin Agric. Expt. Sta. Res. Bull.* **87**, 24., 1929.

This paper gives the results of the study of several virus diseases and includes transmission, aging in vitro, thermal death-point, tolerance, influence of chemicals, varietal susceptibility and symptoms which are variable.

-----, & Butler Ogden, W[illiam]  
The overwinter of the tobacco mosaic virus. *Wisconsin Agric. Expt. Sta. Res. Bull.* **95**, 25 p., 1929. (*Rev. Appl. Mycol.* **9** (3) : 207, 1930.)

This paper gives the results of extensive field experiments to determine the relative importance of various methods of overwintering.

-----, & Hoggan, Ismé A[ldyth]

The challenge of plant virus differentiation and classification. Fifth Int. Bot. Congr. Cambridge 1930: 379-380, 1930. (Science 73(1880): 29-32, 1931.)

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"Katahdin" a new variety of mosaic resistant potatoes. Science n. s. Suppl. 75(1938): 12, 1932.

-----, & Grant, Theodore J.

The properties of plant viruses from different host species. Phytopathology 22(9): 741-757, 1932.

"The thermal death points, resistance to aging *in vitro* dilution tolerance, and the resistance to certain chemicals of the viruses of ordinary tobacco mosaic, cucumber mosaic, tobacco ring-spot, and tobacco spot necrosis (potato-rugose mosaic) have been compared in extracts from several species of host plants. The experimental results show that the host species in which the viruses developed did not radically influence the constancy of the properties of each virus. Some minor influences were noted that are hardly to be regarded as of sufficient magnitude to be of actual significance.

The contentions that have previously been made in the literature that plant viruses may be fundamentally changed by the host plant affected and that the properties of viruses cannot be adequately studied in a comparative way with the ordinary technique are consequently not supported by the results secured. It is believed that the properties of artificially transmissible plant viruses offer one of the most convenient and reliable criteria for their isolation, differentiation and classification.

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Cucumber mosaic on tobacco in Wisconsin. Phytopathology (Abstract) 23(3): 311, 1933.

Report of field observations. The author points out the occurrence of cucumber mosaic in an epidemic form on tobacco. Appears on the basis of past field records to be unusual.

Johnston, John R[obert,] & Stevenson, John A[lbert]

Fungi and diseases of sugar cane in Porto Rico. Journ. Dept. Agric. Porto Rico 1(4): 228-233, 1917.

Brief notes: Early account of the occurrence of mosaic disease of sugar cane (called mottling) in Puerto Rico.

-----, & Ashby, S[ydney] F[rancis,] Bancroft, C[laude] K[eith] Nowell, W[illiam] & Stevenson, John A[lbert]

Diseases of sugar cane in tropical and subtropical America, especially the West Indies. West Indies Bull. 16(4): 298-300, 1918.

Brief notes on sereh and mosaic disease of sugar cane, the first in Java and the second in Puerto Rico. Description of both diseases.

-----  
The new cane disease in Cuba. The Louisiana Planter & Sugar Mfg. **63**(6) : 43, 1919.

The author declares that at least the disease is present in three provinces. Quarantine measures are recommended. The author discusses also the history of the disease in other countries.

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La enfermedad "Mosaico" de la caña de azúcar. (The disease "mosaic" of sugar cane.) Sección de Sanidad Vegetal, Cuba, Circ. No. **6**, 11 p., 1919.

The author gives popular discussion and recommendations.

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The mosaic disease of sugar cane in 1923. (A discussion of the problem to date.) United Fruit Co., Agric. Res. Dept. Pamphlet, 35 p., 1923. (Louisiana Planter **73**(1) : 10-11, (2) 30-32, (3) 49-52, 1924. The Int. Sugar Journ. **26** : 469-473, 1924. A Rev. by C. A. Barber in Rev. Agric., Porto Rico **13** : 265-272, 1924.)

A popular but very comprehensive discussion of this disease.

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Control of sugar cane mosaic. Louisiana Planter **74**(10) : 190-191, 1925.

The disease spreads slowly in Cuba. Control by inspection and roguing is recommended.

**Joly, R. L.**

Les conséquences de la mosaïque du manioc. (The effects of Cassava mosaic.) Rev. de Bot. Appl. et d'Agric. Trop. **11**(114) : 99-104, 1931.

On *Manihot utilissima* and *M. dulcis*. The former is the more resistant.

**Jones, F[red] R[ueel] & Granovsky, A[lexander] A[nastacievitch]**  
Yellowing of alfalfa caused by leafhoppers. Phytopathology (Abstract) **17**(1) : 39, 1927.

**Jones, G. H[oward] & Mason, T. G.**

On two obscure diseases of cotton. Ann. Bot. **40**:(160) : 759-771, 1926.

Description of two diseases of cotton in Nigeria, "leaf curl" and "leaf roll". "Leaf curl" is a virus disease, while "leaf roll" is not infectious and is caused by excessive soil humidity.

**Jones, L[eon] K[ilby]**

The effect and the rate of spread of "streak" on greenhouse tomatoes. Phytopathology **20**(10) : 851, 1930.

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 Virus diseases of raspberry in Washington. Washington State Hort. Assoc. Proc. **26**:196-199, 1930.

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 The mosaic disease of beets. Washington Agric. Expt. Sta. Bull. **250**, 16 p., 1931.

The author discusses briefly the general aspects of the disease, concluding that it is not in the soil and is transmitted by the mother beets. Curly-top is also present in Skagit County. Mosaic disease is also reported in garden beets, sugar beets, mangels and spinach.

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 A new method of inoculating with viruses. Phytopathology (Abstract) **22**(12):998-999, 1932.

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 The sources of the viruses that causes streak of tomato. Phytopathology (Abstract) **22**(12):999, 1932.

Caused by a combination of latent potato virus and common tobacco mosaic.

-----, **Anderson, E. J., & Burnett, G[rover]**  
 (The latent virus of potatoes.) Phytopath. Zeitschr. **7**(1): 93-115, 1934.

**Jones, Lewis R[alph] & Shear, C[ornelius] L[ott]**

False blossom of cranberries. Wisconsin Agric. Expt. Sta. Bull. **240**, 1914.

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 A report upon false blossom and other cranberry maladies. Wisconsin State Cranberry Growers' Ass'n Ann. Rpt. **27**: 13-14, 1914.

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 Soil temperature as a factor in phytopathology. Plant World **20**:229-237, 1917.

-----, **Miller, M[aude] & Bailey E[rnest]**  
 Frost necrosis of potato tuber. Wisconsin Agric. Expt. Sta. Res. Bull. **46**, 1919.

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 Experimental work on the relation of soil temperature to diseases in plants. Wisconsin Acad. Sci. Arts & Letters. Trans. **20**: 433-459, 1922.

-----, **Johnson, James & Dickson, J[ames] G[eere]**  
 Wisconsin studies upon the relation of soil temperature to plant diseases. Wisconsin Agric. Expt. Sta. Res. Bull. **71**, 1926.

-----, & **Riker, Regina [Emma] S[tockhausen]**

Progress with the control of aster wilt yellows. *Phytopathology* (Abstract) **19**(1): 101, 1929.

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Further progress with the control of aster wilt and yellows. *Phytopathology* (Abstract) **20**(1): 129, 1930.

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Wisconsin studies on aster diseases and their control. *Wisconsin Agric. Expt. Sta. Res. Bull.* **111**, 39 p., 1931.

This publication includes a very complete discussion of aster yellows and its control.

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The oldest known plant virus disease. *Science. n.s.* **75**(2052): 385, 1934.

This is a review of M. B. Mc Kay and M. F. Werner's Historical sketch of tulip mosaic or "breaking".

**Jones, Philip M[allory]**

A Mycetozoan found in tobacco plants with mosaic-like symptoms. *Phytopathology* (Abstract) **16**(1): 67, 1926.

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Structure and cultural history of a mycetozoan found in tobacco plants with mosaic-like symptoms. *Bot. Gaz.* **81**(4): 446-459, 1926.

The author gives results of studies which lead him to believe that tobacco mosaic is due to an organism which he describes under the name of *Plasmodiophora tabaci*.

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Parasite Calkinsi on *Plasmodiophora tabaci* and its possible etiological role in tobacco mosaic. *Arch. Protistenk.* **62**(2-3): 307-312, 1928.

The author describes an unidentified parasite which he believes to be the cause of the mosaic.

**Jones, Walter, & Rawlins, T[homas] E[lsworth]**

Influence of spindle-tuber disease on the physiology of the potato tuber. *Phytopathology* (Abstract) **19**(12): 1137, 1929.

**Jordi, Ernst**

(Report on plant diseases.) *Jahresber Landw. Schule Riits*, **1909-10**: 108-114, 1910.

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Die Blattrollkrankheit der Kartoffel. (The leaf roll disease of potatoes.) Jabresher. d. Landw. Shule Rütli-zollikofen 1916-18. Anzew Bot. 1:216, 1919.

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Die Blattrollkrankheiten der Kartoffel. (Leafroll diseases of potato.) Mitteil. Naturf. Ges. Bern. (Abstract) 1922:36-37, 1923.

#### Jorstad, I[van]

Beretning om plant ensykdommer i land og havebruket 1920-23.

II Frikktraer og haervekster. (Report on plant diseases in agriculture and horticulture in 1920-23. II Fruit trees and small fruits.) Cristiania Grondahl and Sons Boktrykkeri, 73 p., 1923.

A record of cultivated raspberry mosaic.

#### Jorgensen, C. A., & Nielsen, O[laf]

Kartoffelsorter og Kartoffelsygdomme. Orienterende undersøgelser. (Potato varieties and potato diseases. Preliminary investigations.) Tidsskr. for Planteave 39(2):295-315, 1933.

A detailed and tabulated account is given of the authors' investigations in Denmark for five years, on the reaction of some standard varieties to late leaf roll, mosaic and other diseases.

#### Kaiser, P.

Die Blattrollkrankheit der Kartoffel. (The leaf roll disease of potato.) Prakt. Ratgeb. Obstr-u Gartenbau 37:387-388, 1922.

#### Kamerling, Z[eno]

Onderzoekingen over onvodoenden groei ontijdig afsterven van rilt als gevlg van wortelziekten. Meded. van het Proefstation Suikerriet West Java No 48, 1900.

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De gele-strepensiekten der bladeren. (The yellow stripe disease of the leaves. ). Proefstation Suikerriet West Java "Kakok" to Pekalongan, Verslag. 1902:76-81, 1903.

#### Karunakara Menon, C.

Does fire, or exposure of trees growing under shade, or damage to hosts lead to spike disease in sandal? Indian For. 45:498-500, 1919.

**Kasai, Mikio**

(Observations and experiments on the leafroll disease of the Irish potato in Japan.) Ber. Ohara Inst. Landw. Forsch, 2 (1) : 47-77, 1921.

Gives a history of the disease in Japan.

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(Mosaic disease of cucumber.) Agric. Lec. 5 : 42-71, 1923.

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Investigations on the Nelson's Bodies as observed in the leafroll, mosaic and healthy plants. Ber. des Ohara Inst. Landw. Forsch. in Kuraschiki, Japan. (English trans.) 2(4) : 443-461, 1924.

The author gives a review of the literature and the results of his studies on bodies found in the phloem tissues. He believes these bodies to be disintegrating nuclei.

-----  
(Studies on the potato leafroll.) Japanese Dept. Agric. & Forsch. Bur. Agric. Mycol. & Entom. Bull. 17, 70 p., 1926.

**Kellerman, K[arl] F[rederic]**

Leaf-cut or tomosis of cotton seedlings. U. S. D. A. Ann. Rpt. p. 159, 1918. (Br. of Plant Indust. Rpt. for 1918, p. 25.)

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Phony disease of peach. U. S. D. A. Br. Plant Indst. Plant Dis. Rept. 14(17) : 171, 1930.

A record of occurrence of this disease.

**Kelly, N. L.**

Bureau of Sugar Experiment Station. Assistant Plant Pathologist, Report. Australia Sugar Journ. 18(3) : 171, 172, 1926. (Rev. Appl. Mycol. 5 : 696-697, 1926. Queensland Agric. Journ. 26(2) : 115, 1926.)

Contains a brief discussion of mosaic of sugar cane and other diseases.

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Assistant Pathologist Report. The Australian Sugar Journ. 18 (5) : 277-278, 1926.

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Mosaic disease in cane. Sugar 18(3) : 171-172, 1926. (Queensland Agric. Journ. 25(6) : 498, 499, 1926.)

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Bureau of Sugar Experiment Station. Cane pests and diseases. Queensland Agric. Journ. 26(2) : 115, 1926.



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Cane pests and diseases. Queensland Agric. Journ. 27: (2): 82, 83, 96, 98, 1927. (Rev. Appl. Mycol. 6: 375, 376, 1927.)

**Kendrick, James B[lair,] & Gardner M[ax] W[illiam]**

Soybean mosaic seed transmission and effect of yield. Journ. Agric. Res. 27(2): 91-98, 1924.

The disease is transmitted through the seed. It reduces the yield of seed. The seed from diseased plants do not germinate well.

**Kerling, L[ouise] C[atharina] P[etronells]**

Microscopisch onderzoek van pseudonet-necrose en Kringerigheid van de Aardappel. (Microscopic investigations of pseudo-net necrosis and "Krigerigheid" of the potato.) Meded. Landbouwhooschool Wageningen. 33(10): 17, 1929. (Rev. Appl. Mycol. 9: 477. 1930.)

The first disease is transmitted in the seed. The second occurs on certain soils. The microscopic characters are very similar.

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Microscopic investigations of pseudonetnecrosis and Krigerigheid of the potato. Phytopathology (Abstract) 20(1): 138, 1930.

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The anatomy of the "Kroepoek-diseased" leaf of *Nicotiana tabacum* and of *Zinnia elegans*. Phytopathology 23(2): 175-190, 1933.

A detailed description of the writer's observations in his anatomical studies on tobacco and zinnia leaves received from Java, which were affected by "common" and "transparent" types of "Kroepoek" (leaf curl).

**Keur, John Y.**

Seed transmission of the virus causing variegation of abutilon. Phytopathology (Abstract) 23(1): 20; 1933.

Studies of transmission of the virus causing variegation in *Abutilon thompsoni* and *A. mulleri* in seedlings produced by crossing these two species.

-----  
Partial recovery and immunity of virus-diseased abutilon. Phytopathology (Abstract) 24(1): 12-13, 1934.

**King, C[harlmers] J[ackson] & Loomis, H[arold] Frederic**

Factors influencing the severity of the crazy-top disorder of cotton. U. S. D. A. Bull. 1484, 21 p., 1927.

**Kinney, Addison**

Cane diseases in the Hawaiian Islands. The Planter & Sugar Mfg. 76(10): 191-192, 1926. (Rev. Appl. Mycol. 5:518, 1926.)

Studies and estimate of losses due to mosaic.

**Krickner, Emil Otto, Oskar von**

Die blattrollkrankheit der kartoffeln. (The leafroll disease of potatoes.) Deutsche Landro Presesse 45 No. 14, 1919. (Ztschr. Pflanzenkrankh. 29:54, 1919.)

Discussion of symptoms of true potato leafroll and separating it from other diseases. Cause not found.

**Kirk, T[homas] W[illiam]**

Potato diseases. New. Zeal. Dept. Agric. Ann. Rpt. 13:346-363, 1905.

**Kirkpatrick, T[homas] W[infrid]**

Preliminary note on leaf-crinkle of cotton in the Geriza area. Sudan. Bull. Ent. Res. 21(2):127-137, 1930.

Control experiments indicated that a white fly (*Aleurodidae*) is the vector. Experiments with *Empoasca fascialis*, gave negative results.

-----  
Leaf-curl in cotton. Nature 125(3157):672, 1930. (Rev. Appl. Mycol. 9:590, 1930.)

A disease of long staple cotton in the Sudan region appears to be caused by a virus and is transmitted by a species of *Aleurodidae*.

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Further studies of leaf-curl of cotton in the Sudan. Bull. Ent. Res. 22(3):323-363, 1931.

The author adopts the name "leaf-curl" which is manifested by symptoms of "leaf-crinkle" on some varieties of cotton and mosaic on others. Crinkle is transmitted by white flies (*Bemisia gossipi-perda*). It attacks *Hibiscus esculentus*, *H. cannabinus*, *H. sabdariffa* and *Althea rosea*.

**Kirschner, R.**

Die Blattrollkrankheit des hofpens. (The leafroll disease of hops.) Biol. Generalis Vienna 5:225, 1929. (Abstract in Fortschr. der Landw. 6(21):699-700, 1929. Rev. Appl. Mycol. 9(2):131, 1930.)

The author believes that this disease is due to manure.

**Klapp, E. L.**

Ukologie und Abbau der Kartoffel. (Ecology and degeneration of the potato.) Pflanzenzucht. 8(9):213-218, 1932.

Brief discussion of the various hypotheses of the etiology of the virus diseases. Gives also considerations of the potato degeneration problems in relation to the ecology in German and full details of a system of experimentation.

Der Abban der Kartoffel als Folge von Leistungsüberspannungen. (Potato degeneration as a sequel to overtaxation of the productive capacity.) Pflanzenbau Pflanzenschutz u. Pflanzenzucht. **10**(4) : 129-146, (5) : 161-197, 1933.

Continuation of previous work and observations in which the author develops his theory of an ecological basis for potato degeneration.

### Klebahn, Henrich

Ueber eine Krankhafte Veränderung der *Anemone nemorosa* L. und über ihren in den Drüsenhaaren derselben Pilz. Ber. D. Bot. Ges. **15** : 527-536, 1897.

Virus Krankheiten. (Virus diseases.) *Plant* **6**(1) : 43-63, 1923.

Die Alloiophyllie des *Anemone nemorosa* und ihre vermutliche ursache. (Alloiophyly on *Anemone nemorosa* and its probable cause.) *Planta Arch. Wiss. Bot.* **1**(4) : 419-440, 1926. (Ztschr. Wis. Biol. Abt. Ber. Deutsche Bot. Gesellech **43**(32)-(37), 1926.)

Reports the finding of bacteria-like bodies in the cells. The disease is transmitted through the soil.

Ueber viruskrankheit und Alloiophyllie. (mit Demonstrationen.) (Virus diseases and alloiophyly.) *Naturwissenschaften* (Abstract.) **16**(45-47) : 1002, 1928.

Ausschluss an alloiophyllie und viruskrankheiten. *Plants* **5** : 49-73, 1928.

Experimentalle und cytologische untersuchungen im anschluss an alloiophyllie und viruskrankheiten. *Ztschr. Wiss. Biol. Abt. E. Planta* **6**(1) : 40-95, 1928.

The author describes the symptoms of alloiophyly a disease of *Anemone nemorosa*. The disease was produced by inoculation with filtered juice. The author also made a study of cell inclusions which be classified as follows; 1—amoeboid bodies; 2—thread-like bundles, and 3—striated bodies, all of which are founded in the phloem of both healthy and diseased plants; 4—trypanoplasts which are found in both healthy and mosaic potato and *A. thompsoni*.

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On scolecosomes and on similar bodies in mosaic diseased plants. Proc. Int. Congr. Plant Sci. (Ithaca, N. Y.) 1929: 1243-1248, 1929.

When *Anemona ranunculoides* and *A. tripolia* were inoculated with juice from *A. nemorosa*, scolecosomes were produced. Similar bodies were found in several other plants infected with virus diseases.

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Fortsetzung der experimentellen Untersuchungen über alloiophyllie und Viruskrankheiten. Phytopathology Ztschr. 4(1): 1-36, 1931.

Efforts to cultivate tobacco mosaic virus gave negative results. The precipitate in sealed tubes for one year gave positive results when inoculated into plants.

**Klemm, M. J.**

Mosaikkrankheiten der kulturpflanzen. (Mosaic diseases of cultivated plants.) Ostenrop. Landw. Ztschr. 9(11): 1932.

**Knight, Thomas Andrew**

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Die Kartoffelarkenung in Holland. Mitt. Deustch. Landw. Geselch. 14(23) : 505-508, 1930.  
Potato seed selection for the gradual elimination of virus disease.

**Kofoid, Charles A[twood], Severinin, H[enry] Herman P[aul], & Swezy Olive.**

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**Köhler, E[rich]**

Stellungnahme zum Problem for Kartoffelbans. Die Kartoffel 10 : 159-160, 1930.

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Die Rolle der Viruskrankheiten beim Kartoffelabbau. (The role of the virus diseases in potato degeneration.) Angew. Bot. 15(2) : 122-131, 1933.

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Untersuchugen über die Viruskrankheiten der Kartoffel. I Versuche mit Viren aus der Mosaikgruppe. (Investigations

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Viruskrankheiten an Tomaten und Gurken unter Glas. (Virus diseases of tomatoes and cucumbers under glass.) *Nachrichtenbl. Deutsch. Zenschutzdienst*, 13(2) : 11-13, 1933.

Brief review of the knowledge of the virus diseases of tomatoes and cucumbers occurring in glasshouses.

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Brief popular account on the occurrence, etiology and control of leaf-roll mosaic, leaf curl and streak of potatoes in relation to degeneration in Germany.

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 (The spot or mosaic disease of Holland tobacco.) Ztschr.  
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**Kopp, A[ndré]**

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The author gives the observations on the slow spread of the disease.

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 Nouvelles constatations sur la maladies a virus de la canne á  
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 Observations nouvelles concernant la mosaïque de la canne á  
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A brief description of the topography of the island. Owing to  
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to windward part of the island except by the aid of man. The mosaic was introduced 15 or 20 years ago, probably from Java. The disease has spread more abundantly on the leeward. Varieties Luizir and Post Mackay are very susceptible. Best varieties are disappearing because of mosaic and gummosis. Mosaic is carried by cuttings and by *Aphis maidis* which is abundant. Restricted to a relatively small area on the windward side. Difficult to understand why it is not more general on the windward side. Experimental work at the Station indicates that the disease may be dormant for very long periods of time. Streak is most common in Uba. Also occurs on other canes and corn but is rare on most canes except Uba and R. P. 8. It is transmitted from *Coix Lachryma jobi* to R. P. 6, by *A. maidis*. This is contradictory to results of Storey. Uba is more susceptible to virus from Uba than to virus from corn. Virus from Uba and corn does not appear to infect *Eleusine indica*, but the virus from POJ 213 does infect *E. indica*. The virus is carried by *A. maidis* from corn to corn and from cane to cane. It is also carried from *Coix Lachryma jobi* to cane. Cane growing near corn which is badly infected with the streak and infected with *A. maidis* did not contract the disease. This was also true of oats. *Coix Lachryma jobi* and some grasses appear to be reservoirs for the virus.

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 Situation actuelle de la mosaïque de la canne à la Réunion.

(Actual situation of sugar-cane mosaic in Reunion. Travaux Tech. Ile de la Réunion, Bull. 3:11-19, 1932.

A discussion of the distribution and importance of the importation of canes.

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Die Blatrollkrankheit der Kartoffel und ihr Auftreten in Oesterreich. (The leafroll disease of potato and its occurrence in Australia.) Monastshäfte für Landw. Jahrg. 2(3):79-90, 1909.

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(Virus diseases causing sterility.) Phytopath. Zeitschr. 5(6):593-602, 1933.

Report of the author's observations on certain abnormalities of the reproductive organs on some species and hybrids of *Nicotiana*, induced by virus diseases. He denominates the virus causing sterility "female sterility virus".

(A contribution to the sterility and irregularities in the meiotic processes caused by virus diseases.) *Genetica* **15**(1-2):103-114, 1933.

Continuation of the previous work of the author at Leningrad on the female sterility virus of tobacco.

**Kotila, J[ohn] E[rnest]**

Mosaic and potato yields in Michigan. Michigan. Agric. Exp. Sta. Quart. Bull. **5**(4):188-189, 1923.

The author reports a loss of 32 per cent due to mosaic.

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Trypanosome-like bodies in Solanaceous plants. *Phytopathology* **13**:324-326, 1923.

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Transmission studies of virus diseases of potato in Michigan, 1926-27. *Potato Ass'n. Amer. Proc.* **14**:95-101, 1927.

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Roguing and potato virus disease control. *Potato Ass'n. Amer. Ann. Meetg. Proc.* 16th. **1929-30**:164-168, 1930. (*Rev. Appl. Mycol.* **9**:551, 1930.

This paper gives the results of roguing for the control of these diseases. The percentage of virus disease in the next crop was very high; mosaic and leafroll the highest. The author believes that *Solanum dulcamara* and *Physalis grandiflora* were sources of infection.

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Experiments with the tuber index method of controlling virus diseases of potato. Michigan Agric. Expt. Sta. Bull. **117**, 26 p., 1931.

A description of methods and results of experimental work.

**Kottman, G.**

The seroh cane disease. *Sugar Cane* **23**:313-317, 1891.

**Kramer, S[imon] P[endleton]**

Experiment with bacterial filters and filterable viruses. *Science* **65**:46, 1927

A brief account on the subject in general but not especially on plant viruses.

**Krantz, F[red] A[lbert,] & Bisby G[uy] R[ichard]**

Relation of mosaic to running-out of potatoes in Minnesota.  
Minnesota Agric. Expt. Sta Bull. **197**, 31 p., 1921.

Gives the history, symptoms and methods of transmission of this disease. Also field experiments to determine effect on yields.

**Kranzlin, G[ottfried]**

Untersuchungen an Panaschierten Pflanzen. (Investigations on variegated plants. Zrscht. Pfnazenkrank. **18**:193-203, 1908.

A record of spectroscopic studies.

**Kraybill, Henry R[esist,] & Eckerson, Sophie, H[ennion]**

Tomato mosaic. Filtration and inoculation experiments. Amer. Journ. Bot. **14**(8):487-495, 1927.

Used a fritted glass filter and secured (1) a residue which produced mosaic, and (2) a filtrate which produced a fern leaf.

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Separation of fern leaf from mottling in tomato mosaic. Phytopathology **17**(1):57-58, 1927.

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The separation from mosaic tomato plants of toxins which produce some of the typical symptoms. Phytopathology (Abstract) **19**(1):108, 1929.

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A non-infectious leaf-deforming principle from mosaic tomato plants. Phytopathology, **22**(7):629-636, 1932.

The authors induced a filiform leaf on tomato plants by heavy inoculations with preparations made from tomato plants but which was non-infectious for mosaic. Later growths were normal. The abnormality was not produced with preparations from healthy tomato plants.

**Krüger, K.**

Beiträge zur Physiologie der Blattrollkrankheit der kartoffel. (Contribution about the physiology of the leafroll disease of potato.) Wiss. Arch. Landow. A. Arch. Pflanzenzan **9**(3):496-524, 1932.

**Krüger, W.**

Vorläufige Mitteilungen über die sogenannte "Serehkrankheit" des Zuckerrohres. Ber. Versuchstat. Zuckerrohr. in West-Java, Kagok-Tegal (Java) **1**:126-179, 1890.

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Weitere Mitteilungen über die Serehkrankheit der Zukerrohres zur Belenchtung des Standes der Serehfrage Ber. Versuchsstat

Zuckerrohr in West-Java, Kagok-Tegal (Java) **2**: 122-219, 1896.

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 Ueber die Ursache der Serehkrankheit des Zucherrohres. Eine Kritik der Arbeit und Theorie von Wakker. (On the cause of sereh disease of sugar cane. A criticism of the work and theory of Wakker.) Deutsche Zuckerind. **23**: 225-235, 1898.

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La mosaïque du manioc. (Mosaic of Cassava.) Compt. Rend. Soc. de Biol. **109**(12): 1146-1148, 1932. (Ann. de Gembloux **38**(11): 365, 1932.)

The authors report a second mosaic disease of *Manihot utilissima*, *M. aipi* and *M. glaziovii*. It is transmitted by an *Aleurodidae*. The record is from Belgian Congo.

**Kulkarni, G[okal] S[ubras]**

Mosaic and other related disease of crops in the Bombay Presidency. Poona Agric. Coll. Mag. **16**(1): 6-12, 1924.

**Kunkel, L[ouis] O[tto]**

A possible causative agent for the mosaic disease of cane. H. S. P. A. Expt. Sta. Bot. ser. Bull. **3**(1): 44-58, 1921. (Science n.s. **55**: 73, 1928. Arch. Java Suikerindus. **1922**: 356, 1922.)

Gives symptoms, distribution, varietal resistance and a very thorough discussion of the intracellular bodies which the author believes to be the cause of the disease.

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 Mosaic disease on a new grass host. Hawaii Planters' Rec. **26**(3): 163, 1922.

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 Amoeboid bodies associated with *Hippeastrum* mosaic. Science **55**: 73, 1922.

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Studies on the mosaic of sugar cane. H. S. P. A. Bull. Expt. Sta. Bot. ser. **3**(2):115-167, 1924. (Rev. Appl. Mycol. **3**:607-608, 1924.)

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Further studies on the intra-cellular bodies associated with certain mosaic diseases. H. S. P. A. Expt. Sta. Bot. ser. Bull. **3**(2):108-114, 1924. (Rev. Appl. Mycol. **3**:598, 1924.)

Discusses the intra-cellular bodies in several species of plants.

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Insect transmission of aster yellows. Phytopathology (Abstract) **14**(1):54, 1924.

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Histological and cytological studies on the Fiji disease of sugar cane. H. S. P. A. Expt. Sta. Bot. ser. Bull. **3**(1):99-107, 1924.

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Insect transmission and host range of aster yellows. Science n.s. **62**(1614):524, 1926.

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The author discusses question concerning possible causes and methods of transmission and suggests lines of research.

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Studies on aster yellows. Amer. Journ. Bot. **13**(10):646-705, 1926.

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Incubation period of aster yellows in its insect host. Phytopathology (Abstract) **16**(1):67, 1926.

The author gives a description of the disease and experiments proving that it is carried by *Cicadula sexnotata*. It is not carried in seeds. It attacks more than 50 species of plants and overwinters in some of them. The same virus caused the Río Grande or white heart of lettuce, bunchy-top of *Helichrysum* and a disease of buckwheat.

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Sterility caused by the aster yellow disease. Amer. Hort. Soc. New York. **3**:243-244, 1927.

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The corn mosaic of Hawaii distinct from sugar cane mosaic. *Phytopathology* (Abstract) **17**(1):41, 1927. (Rev. Appl. Mycol. **6**:438, 1927. Rev. Appl. Ent. ser. A. **15**:283, 1927.)

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Some characteristic of virus disease of plants. *Journ. Bact.* **13**(1):23-24, 1927.

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Virus diseases of plants. In filterable viruses ed. by T. M. Rivers, p., 335-358, 1928.

A very excellent review of our knowledge of the subject to date.

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Mayo Foundation Lectures. Lecture on plant pathology in relation to man. p., 17-32, W. B. Saunders Co. Philadelphia, 1928.

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Further studies on the host range of aster yellows. *Phytopathology* (Abstract) **18**(1):156, 1928.

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Wire screen fences for the control of aster yellows. *Phytopathology* (Abstract) **19**:100, 1929.

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Wilt resistant aster. *Phytopathology* (Abstract) **19**(1):100, 1929.

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The aster yellows disease. *Proc. Intern. Congr. Plant Sci. Ithaca* **2**:1249-1253, 1929.

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Transmission of sida mosaic by grafting. *Phytopathology* (Abstract **20**(1):128-130, 1931. (Rev. Appl. Mycol. **9**:385, 1930.)

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Transmission of aster yellows to the tomato. *Phytopathology* (Abstract) **20**(1):129, 1930. (Rev. Appl. Mycol. **9**:418, 1930.)

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Inoculation period by peach yellows as affected by point inoculation. *Science* (Abstract) **71**(1846):516, 1930.

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Studies on aster yellows in some new hosts plants. Contr.  
Boyce Thompson Inst. 3(1) : 35-124, 1931.

A record of experimental transmission of this disease to 120 new hosts included in 30 families. The disease had not been transmitted previously to species in 15 of these families.

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Local lesions in Aucuba mosaic of tomato. Phytopathology.  
(Abstract.) 22(1) : 16, 1932.

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Celery yellows of California not identical with the aster yellows of New York. Boyce Thompson Inst. Contr. 4(3) : 405-414, 1932.

The author describes transmission experiments using *Cicadula sex-notata* from aster, celery and carrot plants and concluded that the yellows from California differs from the aster yellows of New York in respect to transmission to celery, no other differences having yet been demonstrated.

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Insect transmission of peach yellows. Contr. Boyce Thompson Inst. 5(1) : 19-28, 1933.

The author gives the results of experiments with a large number of insects and found that the disease was transmitted by *Macropsis trimaculata*. About 10 per cent of the trees contracted the disease.

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Tobacco and aucuba-mosaic infections by single units of virus. Phytopathology (Abstract) 24(1) : 13, 1934.

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Studies on acquired immunity with tobacco and aucuba mosaics. Phytopathology 24(5) : 437-466, 1934.

The author describes the symptoms by which aucuba and tobacco mosaic may be distinguished on *Nicotiana sylvestris*. Then gives a thorough and detailed account of his observations.

**Kuribayashi, K.**

(On the seed transmission of the bean mosaic.) Journ. Plant. Prot. 13 : 199-219, 1926.

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(On the relation between the stripe disease of rice plant and *Delphacodes stieriatellus* Fall.) Journ. Plant. Prot. 18 : 565-571, 636-640, 1931.

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(Studies on the stripe disease of rice plant.) Nagano Agric. Expt. Sta. Bull. 2 : 45-69, 1931.



**Kuster, E[rnst]**

Ueber Mosaikpanaschierung und vergleichbare Erscheinungen.  
(On mosaic variation and comparable phenomena.) Ber.  
Dtsch. Bot. Ges. **36**: 54-61, 1918.

Not mosaic disease. A discussion on mosaic patterns.

Ueber sektorielle Panaschierung und andere Formen der sektoriellen Differenzierung. Monatshefte f. d. Naturw. Unters. **12**: 84-87, 1919.

Pathologische Pflanzennatomie. **3** Muf. 9-39, 1925.

Zur Ätiologie des Panaschierens. (On the etiology of variegation.) Ztschr. f. Pflanzenkrankh. **36**(5/6): 129-142, 1926.

Beiträge zur Kenntnis der panaschierten Gehölze. 14-17 Mitt. Dtsch. Denwl. Ges. Jahrb. p., 258-271, 1926.

Über Panaschierung. (About variegation.) Proc. Int. Cong. Plant. Sci. (Ithaca, N. Y.) p., 1254, 1929.

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**Kuyper, J[an]** \*

Overbrenging van Gelestripenziekte door Insecte. (Transmission of yellow stripe disease by insects.) Arch. voor de Java Indus. **30**: 337-358, 1922.

A discussion of a paper by Kunkel.

Het optreden van strepenziekte in den west-moesson van 1923-24. (The occurrence of stripe disease in the West Monsoon of 1923-1924.) Meded. Proefstat. Java Suiker Indus. **5**: 141-150, 1924.

Het optreden van sereh in maalriet-en bibituin in 1925. Meded. Proefsts. Java-Suikerindust. No. **11**: 275-290, 1925.

Warwaterbehandeling van bibit tegen sereh. (Hot water treatment to "bibit" (seed) against sereh.) Arch. Suikerind. Nederl. Indie **33**: 739-743, 1925.

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 Bibittuinen, selectie op sereh on strepenzeikte. (Seed beds selection for sereh and stripe disease.) Meded. Proofstat. Java Suiker Indus. **23**:949-955, 1926. (Rev. Appl. Mycol. **6**:379, 1927.)

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 Het verband tusschen slijmziekte en voorfgaande hegroeing in de proef of Padang Boelen. Deli Proefst. Medan Vlugschr. **41**, 5 p., 1927.

**Kutín, A[dolf]**

(Control of potato diseases in the field.) Ochrana Rostlin, Prag. **5**:17-19, 1925.

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**Labergerie**

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Leafhopper injury to potatoes. *Phytopathology (Abstract)* **12**:(1):37, 1922.

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Ziekten en plagen der cultuurgewassen in Nederlandsch-Indie in  
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Tobacco Plant Pathology at the North Carolina Sta. North Carolina Agric. Expt. Sta. Ann. Rept. p. 97-100, 1930.

Work in progress on tobacco mosaic.

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Introductory note on virus diseases of plants in Kenya. Journ. Hist. Soc. **37**: 198-200, 1931.

A popular discussion.

**Leroux, L[ucien]**

La chloroses des plantes. (Chlorosis of Plants.) Rev. Gen. Sci. Pur. et Appl. **36**: 418-420, 1925.

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The wiry tomato. A recessive mutant form resembling a plant affected with mosaic disease. Journ. Heredity, **19**(8): 337-344, 1928.

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Disease resisting varieties of plants. West Indian Bull. **4**(1): 48-57, 1903.



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(The nature and relations of the intracellular inclusions present in the mosaic of tobacco.) Medeel. Landbouwhoogesch. Wageningen **33**(1): 3-25, 1929.

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A record of the experimental work. The disease occurred also on *Emilia sagittata*.

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Mosaic and leafroll of the potato in the northwest. Phytopathology (Abstract) 13(1) : 39, 1923.

**Link, G[eorge] K[onrad] K[arl,] Jones, Philip M. & Taliaferro, W[illiam] H[ay]**

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Ueber Mikroskopisch sichtbare, filtrierbare Virusarten. Ueber Strongyloplasmien. Centbl. Bakt. Abt. 1, Orig. 48 : 77-90, 1908.

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Die mikroskopisch Darstellung des filtrierbaren Virus (Chlamydozoa-Strongyloplasmien.) Kraus, R. und Uhlenhuth, P., Handbuch der mikrobiologischen Technik, 1: 381-412, 1923.

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Ueber die mosaikkrankheit der *Prunella vulgaris* L. Ann. Soc. Zool-Bot. Fennicae Vanamo, 11: 143-149, 1930.

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Zur Mosaikkrankheit des Tabaks. (Mosaic disease of tobacco.) Trav. Bot. Neerlandais 7: 107-129, 1910. (Bot. Centralbl. (Abstract) 114: 518, 1911. Centralbl. f. Bakt. 31: 324, 1910.)

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Phytological studies of Connecticut leaf tobacco. U. S. D. A. Division of Veg. Phys. and Pathology. Rpt. 65: 24-27, 1900.  
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Effects of enzymes upon the infectivity of the virus of tobacco mosaic. Boyce Thompson Inst. Contr. 3(2): 147-162, 1931.

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Catalase-A new enzyme of general occurrence. U. S. D. A. Div. of Veg. Phys. and Pathology Rpt. 68: 1-47, 1901.

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Has yellow stripe or mottling disease any effect on the sugar content of cane juice? Journ. Dept. Agric. Porto Rico 3(4): 47-64, 1919.

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Chemical variations in yellow striped cane. Insular Expt. Sta. Porto Rico. Ann. Rpt. 1920: 77-78, 1920.

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La caña Uba y su rendimiento de azúcar en Puerto Rico. (Yield of the Uba cane in Porto Rico.) Ins. Exp. Sta. Porto Rico. Bull. 28, 1923. English & Spanish Eds.

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 El matizado o mosaico de la Caña: Sus síntomas sobresalientes.  
 (Sugar Cane mosaic: Outstanding symptoms.) La Vida  
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 scribes the disease and reviews the work done to eradicate it. He ad-  
 vises the planting of immune or resistant varieties.

**Loree, R[obert] F[arls,] & Bennett, C[arlyle] W[ilson]**

The raspberry situation in Michigan. Michigan Agric. Expt.  
 Sta. Quart. Bull. 5(1): 31-33, 1922.

Brief popular account of the situation, among other considerations  
 gives roguing as a measure to control mosaic and other diseases.

**Loughnane, James B.**

Insect transmission of virus A. of potatoes. Nature 131(3319):  
 838-839, 1933.

Study of transmission of potato virus A at the Alberta Agricultural  
 College, Dublin. The author concludes that *Myzus persicae* is an ef-  
 ficient vector of virus A from potato to potato and tobacco. Virus A  
 may also be transmissible by *M. circumflexus*, but attempts to cause  
 infection by means of *M. solani*, *Lygus pabulinus*, and *Calocoris bi-*  
*punctatus* gave negative results.

**Ludewig, K[arl]**

Beitrag zum Studium der Blattrollkrankheit der Kartoffel.  
 (Contribution to the study of leafroll of potatoes.) Landw.  
 Jahrb. 63(2): 277-303, 1926.

Results of experiments on starch transfer as in Hiltner's experi-  
 ments gave negative results.

**Ludtke, M.**

Utersuchungen uber Viruskrankheiten. Beitrage zur kenntnuis  
 des Stoffwechsees mosaikkrancker und gesunder Tabakpflanz-

zen. (Investigations about mosaic disease. Contribution on the study of assimilation in mosaic diseased and sound tobacco plant. *Phytopath. Ztschr.* **2**(4): 341-359, 1930.

The increase of starch in the mosaic plants does not depend on the decreased efficiency of diastase.

**Lushington, P. M.**

Spike disease in sandal. An interesting isolated area and its treatment. *Indian Forester* **44**: 114-117, 1918.

Brief report of the procedures.

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Progress of spike investigation in the southern circle, Madras Presidency, during 1917-18. *Indian forester* **44**: 439-460, 1918.

The author summarized his previous work (*Indian Forester* **44**: 114) and Venkatarama Ayyar (*Indian Forester* **44**: 316) stating additions.

**Lyman, G[eorge] R[ichard] et al**

Report of the conference on diseases of potatoes and seed certification. Washington: War Emergency Bd. Amer. Plant. Path. **1918**: 1-20, 1918.

**Lyon, H[arold] L[oyd]**

A new cane disease now epidemic in Fiji. *Hawaii Planters' Rec.* **3**(4): 200-205, 1910.

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Losses due to yellow stripe disease. *Hawaiian Planters' Rec.* **6**(5): 258-263, 1912.

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Lahaina cane injured by yellow striping. *Hawaii Planters' Rec.* **10**(5): 320-321, 1914.

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Fiji disease in New Guinea. *Hawaiian Planters' Rec.* **12**: 200, 1915.

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Three major diseases, mosaic, Sereh and Fiji disease. *Hawaiian S. P. A. Expt. Sta. Bot. ser. Bull.* **3**(1): 1-43, 1921. (*Agric. News.* **21**(517): 62; 78-79, 1922. *Rev. Appl. Mycol.* **1**: 184-186, 1922.)

A very thorough study of the symptoms and methods of control. Also a study of the causal agent of Fiji.

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Cane Pathology. *Hawaii S. P. A. Expt. Sta. Rpt. Comm. in charge* **1923**: 18-22, 1923. (*Rev. Appl. Mycol.* **3**: 482, 483, 1924.)

**Mac Callum W[illiam] G[eorge]**

Present knowledge of filterable viruses. *Medicine* 5:59-78, 1926.

**Mac Clement, D., & Smith, J[ohn] Henderson**

Filtration of plant viruses. *Nature* 130(3273):129-130, 1932.

Used collodion membranes but found it desirable to standardize every membrane individually. The membranes become clogged with plant materials. However, the authors were able to come to some conclusions concerning the sizes of the particles in several viruses.

**Mackenzie, D[onald]; Salmon, E[rnest] S[tanley]; Ware, William M[elville], & Williams, R. D.**

The mosaic disease of the hop; grafting experiments, II. *Ann. Appl. Biol.* 16(3):359-381, 1929. (*Rev. Appl. Mycol.* 9(2):131, 1930.)

This paper is a record of grafting with a number of varieties.

**Mackie, W[illiam] W[ylie], & Esau, Katherine**

A preliminary report on resistance to curly top of sugar beets in bean hybrids and varieties. *Phytopathology (Abstract)* 21(10):997, 1931.

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A preliminary report on resistance to curly top of sugar beet in bean. *Phytopathology* 22(3):207-216, 1932.

A more detailed, expanded and fully tabulated account of the writer's previous work in California on varietal resistance to curly-top of sugar beet among beans (*Phaseolus vulgaris*).

**Mac Lennan, A[rchibald] H[enderson], & Presant, F[rederick] W.**

Tomato mosaic. *Ontario Dept. Agric. Bull.* 308:25-26, 1924.  
Popular notes very brief.

**MacLeod, D. J.**

Control of mosaic, leafroll and spindle tuber diseases of the potato. *Dominion Expt. Farms. Seasonal Hints, East & B. C. Ed. No. 41*, 1928.

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Effect of size of seed used in commercial planting on the occurrence of virus diseases in potatoes. *Dominion Expt. Farms Seasons Hints*, 51:9-10, 1931.

A brief paper giving results.

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Aster wilt and aster yellows investigations in disease resistance. *Canada Dept. Agric. Div. Bot. Rpt. Dom. Botanist*, 1930:22-23, 1931.

**MacMillan, H[oward] G[ove]**

Potato mosaic masking at high altitudes. *Phytopathology*  
(Abstract) **13**(1) : 39, 1923.

**Macoun, W[illiam] T[yrrell]**

The potato in Canada. *Canada Dept. Agric. Bull.* **90**, 100 p.  
1918.

**Magee, C[harles] J. P[atrick]**

Investigations on the bunchy top disease of banana. *Australian  
Council Sci. & Indus. Res. Bull.* **30**(1) : 7-64, 1927.

A history of the disease in Australia, its geographical distribution  
and a description of the symptoms.

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Virus or degeneration diseases of potatoes. *Agric. Gaz. New  
South Wales.* **41**(6) : 405-412, 1930.

These diseases are prevalent and the infection with leafroll is some-  
times as high as 75 to 85 per cent. The author gives suggestions for  
roguing and seed improvement.

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A new virus disease of banana. *Agric. Gaz. New South Wales*  
**41**(12) : 929, 1930.

In May 1929 there was observed a new disease on banana with all the  
appearance of a virus disease. Preliminary experiments showed that  
it may be transmitted by the banana aphid *Pentalonia nigronervosa*.

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Virus diseases of potato. Control methods for tableland grow-  
ers. *Agric. Gaz. New South Wales.* **42**(11) : 839-841, 1931.

A brief discussion of control.

**Magrou, J[oseph]**

Virus filtrants et chamydozoaires. (Filterable viruses and  
Chlamydozoa.) *Rév. Path. Vég. et Entomol. Agric.* **10** : 41-  
43, 1923.

The author compares the bodies found by Kunkel in corn and  
*Hippeastrum*, with bodies by Negri in rabies, by Palm in tobacco and  
by Guarnieri in small pox. Most authors consider these bodies as des-  
integration products of the cell.

**Maige, L[ouis] A[lbert]**

A new disease of beans. *Bull. Agric. Algérie et Tunisie* **9**(14) :  
334, 1903.

**Malhotra, R. C.**

Biochemical investigation of mosaic in *Solanum tuberosum*.  
*Journ. of Biochem.* **13**(3) : 473-487, 1931.

A brief review of the literature followed by the results of chemical studies.

**Malpeaux.**

Pour éviter la dégénérescence des Pomme de terre; choix preparation et conservation des tubércules de semence. (To avoid the degeneration of potato; selection, preparation and conservation of the seed tubers. *La vie Agric. et Rurale*. Déc., 1918.

**Mandelson, L. F.**

Citrus psorosis control. *Queensland Agric. Journ.* 40(6):504-507, 1933.

Brief popular account of the disease and report of its occurrence in Queensland since 1927. The author describes the Californian method of controlling it. (This is not a paper on virus diseases strictly, but as this disease has been recently considered as caused by a virus, it is of interest to students on virus diseases.)

**Mandenburger, E[dmund] C[arl]**

Compulsory eradication of little peach and peach yellows. *Michigan State Hort. Soc. Ann. Rpt.* 57:66-70, 1927.

**Manns, T[homas] F[ranklin], & Adams, J[ames] F[owler]**

Report of the Department of Plant Pathology and Soil Bacteriology. *Delaware Agric. Expt. Sta. Bull.* 129:18-28, 1921.

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Report of the Department of Plant Pathology. *Delaware Agric. Expt. Sta. Bull.* 138:26-33, 1922.

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Department of Plant Pathology and Soil Bacteriology. *Delaware Agric. Expt. Sta. Bull.* 135:25-46, 1924.

**Marchal, Emile [Jules Joseph]**

La mosaïque du tabac. (Tobacco mosaic.) *Revue Mycologique* 19:13-14, 1897.

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Rapport sur les travaux de la Station de Pathologie végétale de Paris in 1922. (Report of the work done by the Plant Pathology Station, in Paris in 1922.) *Ann. des Epiphyties* 9(1):70-72, 1923.

Report on potato mosaic.

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Les maladies a virus filtrants en pathologie végétale. (The filterable viruses diseases in vegetable pathology.) *Ann. de Gambroux* 36(6):177-195, 1930.



Report of virus diseases on *Fuchsia*, *Antirrhinum*, rose and *Hydrastis canadensis*.

Belgium: short account of crop disease conditions in 1930. Internat. Bull. of Plant Protect. 5(3): 37-38, 1931.

Brief notes on diseases are given among which is mosaic disease of chicory (*Cichorium intybus*).

**Márquez, Severo L.**

Fiji disease of sugar cane. Bureau of Agric. Philippine Islands Circ. 174. (Philippine Agric. Rev. 18(4): 573-574, 1925.

A brief popular discussion of the disease.

**Marre, Eugene.**

La dégénérescence de la pomme de terre. Mission d'études en Hollande. (Degeneration of the potato. Commission of studies in Holland.) 52 p. Imprimerie Carrère Rodez, 1921.

An account of a French mission to Holland for information on the subject. Recommendations for the control of these diseases.

**Marshall, William**

The Rural Economy of Yorkshire 2: 51-67, 1888. (London. T. Calell.)

**Martin, C.**

Discussion on ultramicroscopic viruses infesting animals and plants. Proc. Roy. Soc. B104: 537-560, 1929.

**Martin Jr., G[eorge] Hamilton**

Mosaic of Dahlias. Diseases of forest and shade trees, ornamental and miscellaneous plants in the United States in 1922. Plant Disease Bull. Suppl. 29: 393-461, 1923. (Mimeographed on page 435.)

Report of virus diseases on *Fuchsia*, *Antirrhinum*, rose and *Hydrastis canadensis*.

Disease of forest and shade trees, ornamental and miscellaneous plants in the United States in 1925. U.S.D.A. Plant Disease Report. Suppl. 50: 413-478, 1926.

Report of virus on *Bougainvillea spectabilis*, *Pelargonium*, *Hibiscus rosa-sinensis*, *Delphinium*, *Viola tricolor*, *Primula*, *Ambrosia trifida*, and *Asclepias* spp.

Diseases of forest and shade trees, ornamental and miscellaneous plants in the United States in 1926. U.S.D.A. Plant Disease Reporter, Suppl. 55: 334-393, 1927.

A record of curly-top virus infecting China aster (*Callistephus chinensis*).

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Diseases of forest and shade trees, ornamental and miscellaneous plants in the United States in 1928. Plant Disease Reporter, Suppl. **73**: 366-396. (Mimeographed.) 1929.

Report on Gladiolus 385 and Iris 387 mosaic.

**Martins, J[oseph] P[olkinghorne]**

The germination of healthy and mosaic-affected cuttings selected from the same stool. Hawaii Planters' Rec. **33**: 143-144, 1929.

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Chlorotic streak disease of sugar cane. Hawaii Planters' Rec. **34**: 375-378, 1930.

This paper gives the results of studies demonstrating a new virus disease.

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Field control mosaic disease in Hawaii. Proc. 4th congress Internat. Soc. Sugar Cane Tech. Facts About Sugar (Abstract) **27**(8): 365, 1932.

The disease is much less serious than in the past, owing to rigid field selection and the use of resistant varieties.

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Pathology H.S.P.A. Proc. Fifth-second Ann. Meeting **1932**: 23-42, 1933.

Account of sugar-cane mosaic and chlorotic streak of *Coix Lachrym-jobi*.

**Martin, William H[oep]**

"Spindle-tuber", a new potato trouble. Hints to Potato Growers. New Jersey State Potato Assoc. **3**(8); 1922.

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Spindle tuber. A disease of potatoes. New Jersey Agric. Expt. Sta. Ann. Rpt. **44**: 345-347, 1923.

**Marins Ramos, C. S.**

O combate do mosaico (The fight against mosaic.) Bol. Agric. Bahia (Brazil) **15**: 29-33, 63-65, 1926.

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Novo methodo para combater a propagação de "mosaico na canna de açúcar". (New method of fighting the propagation of "mosaic of sugar cane".) Bol. Min. Agric. Ind. e Comm. Brazil **15**: 793-795. (Correio Agric. Soc. Bahiana Agric. **4**: 199-201, 1926.)

This paper is based on Alfaro's studies on the migration of the *Aphid maidis* and recommends planting so that the cane can make a maximum growth before the period of migration.

**Martyn, E[ldred] B[ridgeman]**

Mosaic disease of cane. *Agric. Journ. of British Guiana* **3**: 112-113, 1929.

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Botanical and Mycological Division Annual Report 1929. *Agric. Journ. British Guiana* **3**(4): 226-233, 1930.

Sugar-cane mosaic has been reported from British Guiana before. In 1929 was found in several fields mostly in the variety D-625. Attempts have been made to control it but 100 per cent infections was present on the third and fourth ratoons.

**Marudarajan, D.**

Mosaic disease of sugar cane. *Journ. Madras Agric. Stud. Union* **15**: 49-56, 1927.

**Marx, T., & Merkenchlager, F[riedrich]**

Zur biologie der kartoffel. 12. Mittheilung. Beobachtungen und untersuchungen über den verlanf des kartoffelabbaues. (On the biology of the potato. Note 12. Observations and Investigation on the course of potato degeneration. *Arb. Biol. Reichsanst. für Land-und Forswirtschaft*, **19**(5): 413-492, 1932.

The author discuss symptoms and characters not usually mentioned and the results of some chemical studies.

**Massee, A. M. et al.**

Experiments in the transmission of reversion in black currants. *East Malling Res. Stat. Ann. Rpt. II. Suppl.* p. 126-150, 1927.

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Further observations on the strawberry *Tarsonemid* mite (*Tarsonemus fragariae* Zimm.) *East Malling Res. Sta. Ann. Rpt.* **1932**: 117-131, 1933.

Account of the possibility that the mite *Tarsonemus fragariae* Zimm. is a vector of the virus disease "Yellow edge" on strawberries.

**Massée, G.**

Perpetuation of potato disease and potato leaf curl by means of hibernating mycelium, *Kew Bull.* **1906**, p. 242-245, 1906.

**Massey, R. E., & Andrews, F. W.**

The leaf-curl disease of cotton in the Sudan. *Empire Cotton Growing Rev.* **9**(1): 32-45, 1932.

A preliminary paper giving the history, symptoms, transmission and other data concerning this disease.

**Mathur, R. N.**

Leaf curl of cotton in garden *Zinnias* in North India. *Nature* **129**(3265) : 797, 1932.

Brief account of a virus disease in garden zinnias identical with leaf curl and transmitted by the same vector (*Bemisia gossypiperda*.)

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Leaf-curl in *Zinnia elegans* at Dehra Dun. *Indian Journ. Agric. Science* **3**(1) : 89-96, 1933.

Description, symptoms and nature of a disease occurring at Dehra Dun, India. The disease is transmitted by *Bemisia gossypiperda*. This disease is very similar to a cotton disease in Sudan and transmitted by the same vector. Report of results of transmission experiments, fully detailed and tabulated.

**Matsumoto, Takashi**

Further studies on the legume mosaic. *Journ. Plant. Protect.* **9**: 517-520, 1922.

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Some experiments with azuki bean mosaic. *Phytopathology* **12**(6) : 295-297, 1922.

The author gives a description of the symptoms and the histology of the diseased plants.

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(Azuki bean mosaic). *Japanese Journal Plant Protect.* **9**(1) : 13-17, 1922.

This paper gives a description of the disease and the results of histological studies.

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Antigenic properties to tobacco mosaic juice. *Journ. Soc. of Trop. Agric.* **1**(3) : 291-300, 1930.

The author gives the results of experiments which will be summarized as follows: "As stated in the foregoing tables the tobacco mosaic juice was capable of stimulating the production of specific precipitating antibodies when the former was injected into a rabbit. This antiserum was also able to inhibit the infective action of the virus under the circumstances as mentioned above. The infective principle of the virus was precipitated by a specific action of the antiserum, consequently the supernatant liquids were left sterile, but in the normal serum-virus mixture the infective principle was not appreciably affected nor separated by the serum. It is by no means clear, however, whether this precipitating reaction is due to the specific action of the infective principle of the virus or rather may be referable to an interaction of some concomitant antigens which are associated with the infected principle of the tobacco mosaic virus and inseparable from the infective principle by means of ultrafiltration or treatment with alcohol."

-----, & **Somazawa, Koetsu.**

Immunological studies of mosaic disease and heat in activation on the antigenic properties of tobacco mosaic juice. Part I, & Part II. Journ. Soc. of Trop. Agric. 2(3): 223-234, 3(1): 24-33, 1930.

The authors continue their studies on the antigenic properties of tobacco mosaic juice.

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Immunological studies of mosaic disease. II. Distribution of antigenic substances of tobacco mosaic in different parts of host plants. The Phytopathological Lab., Taihoku Imp. Univ. Formosa, Japan. Contr. 4(2): 161-168, 1932.

It has been demonstrated that when leaf extracts of mosaic tobacco are injected into rabbit, it is capable of causing a specific precipitate of antibodies. The author gives the inference that the antigenic reaction is actually due to the infective agent.

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Immunological studies of mosaic diseases. III. Further studies on the distribution of antigenic substances of tobacco mosaic in different parts of host plants. Journ. Soc. Trop. Agric. 5(1): 37-43, 1933.

The authors state that "the presence of the antigenic substance, probably an infective principle itself, is definitely demonstrated in the xylem portion of any infected tobacco plants. It was also confirmed that the virus principle was capable of entering the xylem portion even through an unbroken wall, probably through pits in the walls. With regard to the pathway normally taken by the virus in the living plants however, no definite conclusion can be given at present."

**Mattei, G[iovanni] E[ttore]**

La variegatura della foglie é dovuta a batterii? (Is variegation of the leaves due to bacteria? Riv. Biologica 8: 41-61, 1926.

A summary of work showing that mosaic of plants is caused by bacteria.

**Matthews, W. H.**

The agricultural progress of the Pomeroon between the years 1905-1917. British Guiana Journ. Agric. 12(1): 6-10, 1919.

A brief report.

**Matz, Julius**

Infection and nature of the yellow stripe diseases of cane. Journ. Dept. Agric. Porto Rico. 3(4): 65-82, 1919.

Results of experiments and histological studies. The author describes a granular plasma in some of the cells which he believes may be a cause of the disease.

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Ultimos desarrollos en la patología de la caña de azúcar. (Last development in the pathology of sugar cane.) Insular Expt. Sta. Puerto Rico, Circ. **33**:32-36, 1920.

Paper read before the Sugar-Cane Technologists' Association of Puerto Rico. Reviews the work done in sugar-cane pathology and devoted special attention to mosaic disease.

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Naturaleza del mosaico de la caña. (Nature of the mosaic disease of sugar cane.) Sugar **25**:222-223, 1923.

A discussion of bodies found in mosaic plants.

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Annual Report for the Division of Plant Pathology and Botany for the year 1920-21. Insular Experiment. Sta. Porto Rico Ann. Report **1920-21**:52-53, 1921.

-----  
Recent development in the study of the nature of mosaic diseases of sugar cane and other plants. Journ. Dept. Agric. Porto Rico **6**(3):22-27, 1923.

The author reviews the work of Iwanoski, Kunkel and Palm on the intracellular bodies.

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Recientes investigaciones en el estudio de la naturaleza del mosaico de la caña de azúcar y otras plantas. (Recent investigations on the studies of the nature of mosaic disease of sugar cane and other plants.) Rev. Agric. Puerto Rico. **9**(4):9-12, 1922.

Popular discussion of an article that appeared in Journ. Dept. Agric. Puerto Rico. **6**(3):22-27, 1923.

-----  
Artificial Transmission of sugar cane mosaic. Journ. Agric. Res. **46**(9):821-839, 1933.

The author gives a review of the subject and describes a new and successful method of inoculation. A drop of juice from a diseased plant was placed at the base of the youngest leaf of a young plant. A fine needle was passed horizontally or downward through the juice into the tissues five or six times. The juice could be kept at 4 degrees C. indefinitely without inactivation.

-----  
Relative infectivity of mosaic virus extracted from various parts of sugarcane. Phytopathology (Abstract) **24**(1):14-15, 1934.

**Maublanc, A[ndré]**

La mosaïque de la canne à sucre. (Sugar Cane mosaic.) Agron. Colon. No. **61**, 7 pp. Paris. (Rev. Appl. Ent. Ser. A. **11**:168.) 1923.

A discussion of the disease with special reference to its transmission by insects.

**Maupas, Albert**

Sur la maladie de l' enroulement des feuilles de tomates. (Leaf-roll disease of tomatoes.) Rev. Hort. **94**:52-54, 1922.

A popular discussion.

**May, D[avid] W[illiam]**

Kavangire in Porto Rico. (A reply to E. W. Brandes.) Facts About Sugar **21**:522, 1926.

Controversial.

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Kavangire in Porto Rico. (A reply to F. S. Earle.) Facts About Sugar, **21**:1096, 1926.

Controversial.

**May, W.**

Die Rohrzucker-Culturen auf Java und ihre Sefährdung durch die Serehkrankheit. Bot. Zeitung **49**:10-15, 1891.

**Mayer, A[dolf] E[dward]**

Over de mosaikziekte van de tabak: (On the mosaic disease of tobacco.) Woorloopige Meded. Landbouwk. Tijdschr. **1882**:359-364, 1882.

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Over de in Nederland dikwijls voorkomende Mozaikziete der Tabak. (The occurrence of tobacco mosaic disease in Holland.) Landb. Tydschrift. **31**, 1885.

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Ueber die Mosaikkrankheit des Tabaks. (Tobacco mosaic disease.) Landw. Versuchs. Stat. **32**:450-467, 1886. (Journ. Mycology (Abstract) **7**:382-385, 1894.)

The first important paper on tobacco mosaic. Believed the disease to be caused by bacteria but failed to isolate an organism that would reproduce the disease. Disease not caused by fertilizers and not carried by the seed.

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Ueber die mosaikkrankheit des tabaks. Landw. Vers. Sta. **32**:451-467, 1886.

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 Heilung der Mosaikkrankheit des tabaks. (Curing of tobacco mosaic disease.) Landwirsch. Versuch. **35**:339-340, 1888.

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 Ueber die Mosaikkrankheit des Tabaks. (Mosaic disease of tobacco.) Journ. of Mycology **7**(4):382-385, 1894.

An extensive abstract in English by Erwin F. Smith of the paper which appeared in Landw. Versuchs. Stat. **32**:450-457, 1886.

-----  
 Blattrollkrankheit der Kartoffel. (The leafroll disease of potato.) Fuhlings Landw. Zeitg. H. **19-20**:474-478, 1916.

**Mc Alpine, D.**

Bitter pit investigations. First Progress Rpt. 197 p., 1911-12; Second Progress Rpt. 224 p. 1912-13; Third Progress Rpt. 176 p., 1913-14; Fourth Progress Rpt. 187 p., 1914-15; Fifth Progress Rpt. 144 p., 1915-16.

-----  
 Bitter pit in apples and pears: the latest results in preventive measures. Phytopathology **11**(9):366-370, 1921.

Account of this disease and preventing measures with special reference to breeding measures. (Written before the cause of the disease was known.)

**McCall, T[homas] M[ontgomery]**

The effects of certain cultural practices on the transmission of virus diseases of the potato. Potato Assn. of Amer. Ann. Meeting 16th Proc. **1929-30**:161-163, 1930. (Rev. Appl. Mycol. **9**:551, 1930.)

In northern Minnesota spindle tuber gave losses as high as 40 per cent. Other virus diseases less. Gross work on transmission of spindle tuber by cutting knives is confirmed.

**Mc Callan, E[rnest] A[lbert]**

Report of seed potato inspection. Bermuda Agric. Dept., Agric. Bull. **1922**:4-7, 1922.

A record of the amount of leafroll and mosaic in plants grown from the same stock in Bermuda and Nova Scotia.

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 Bermuda: Eine Krankheit der *Lilium longiflorum* und die "Aster yellows". (Bermuda: A disease of *Lilium longiflorum* and the aster yellows.) Inst. Anz. Pflanzenschutz. **1**:65, 1927.

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 Mosaic disease of sugar cane with special reference to its eradication in Natal. South African Sugar Journ. **12**(8):483-489, 1928.



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Sugar cane diseases in South Africa. South African Sugar Journ. **13**(9): 573, 575, 577, 579, 1929; **14**(6): 399-407, 1930. (Rev. Appl. Mycol. **9**(3): 202-203, 1930.)

Mosaic and streak diseases are the most important and are described. Resistant varieties are recommended as means of control.

**Mc Clean, A[lan] P[ercy] D[ouglas]**

The mosaic campaign. Latest information regarding the position. South African Sugar Journ. **11**(5): 297-298, 1927. (Rev. Appl. Mycol. **6**: 696. 1927.)

The status of the campaign at date of publications.

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Bunchy-top disease of the tomato. Dept. Agric. South Africa, Sci. Bull. **100**, 28 p., 1931.

An extensive description of this disease on tomato and its behavior. No insect vectors have been demonstrated in the author's tests. It is readily transmitted artificially and by grafting. It failed to be transmitted to tobacco but it was successfully transferred to *Physalis peruviana* and back to tomato. Control measures are recommended.

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Bunchy top disease of the tomato. Farming in South Africa **6**(67): 275-276, 280, 1931.

Popular account describing the disease. The author states that tomato bunchy-top virus is similar to that of tobacco mosaic. Explains ways of spreading and gives control measures.

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Control of mosaic disease in South Africa. Proc. Fourth Intern. Congr. Sugar Cane Technologists 1932. (Facts About Sugar (Abstract) **27**(6): 260, 1932.)

It was found practically impossible to eradicate mosaic disease from sugar cane, due to the occurrence of the disease on the grass *Setaria Sulcata* which is widely distributed in South Africa. The author declares that it has been reduced to a minimum by the planting of immune or highly resistant varieties. (P.O.J. 2878, 2727, 2725 and 2714, Co. 290, and C. H. 64/21.)

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Streak disease of sugar cane. South Africa Sugar Journ. **17**(5): 247, 249, 251, 253, 255, 257, 259, 1933.

Paper read before the South African Sugar Technologists' Annual Congress. The author makes a full account of the present conditions of the disease in South Africa.

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The behaviour of the cane variety P.O.J. 213 towards streak disease. Fourth Congress Intern. Soc. Sugar Cane Technologists, Puerto Rico 1932, Bull. **27**, 6 p., 1933.

Studies on the behaviour of streak disease in the P. O. J. 213 sugarcane variety.

**Mc Clintock, J[ames] A[lbertine]**

Is cucumber mosaic carried by seed? *Science n.s.* **44**(1144): 786-787, 1916.

Gives evidence that the disease is carried in the seeds.

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Peanut mosaic: an investigation of plant disease. *Peanut Promoter* **1**: 29, 1917.

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Peanut mosaic. *Science n.s.* **45**: 47-48, 1917. (*Int. Rev. Sci. & Pract. Agric.* **8**(5): 802-803, 1917.)

A brief paper, gives a record of the disease.

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Lima bean mosaic. *Phytopathology (Abstract)* **7**(1): 60-61, 1917.

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Spinach blight. *Phytopathology (Abstract)* **8**(1): 74, 1918.

-----, & **Smith L[oren] B[arlett]**

True nature of spinach blight and relation of insects to its transmission. *Journ. Agric. Res.* **14**(1) 1-59, 1918.

Gives a description and history of the disease and the results of experiments with fertilizers, and methods of transmission. Demonstrated that the disease was infectious and carried by *Macrosiphum solanifolii*.

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Overwintering of mosaic of annuals. *Phytopathology (Abstract)* **11**(1): 47, 1921.

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Peach rosette, an infectious mosaic. *Jour. Agric. Res.* **24**(4): 307-316, 1923.

Gives the results of experimental budding which proves that the disease can be transmitted in this manner.

-----  
Cross-inoculation experiments with *Erigeron* yellows and peach rosette. *Phytopathology* **21**(4): 373-386, 1931.

Cross-inoculation of aster yellows, peach rosette were made and observed. Several insects were observed as to the capability to transmit those diseases.

**Mc Cubbin, W[alter] A[lex]**

Report from the branch laboratory of the Division of Botany. *Canada Expt. Farms. Rpts.* **1913**: 497-498, 1913.

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 The disease of tomatoes. Canada Agric. Expt. Farms. Bull. **35**:  
 16 p., 1918.

-----  
 Peach yellows and little peach. Pennsylvania Dept. Agric. Gen.  
 Bull. **382**, 16 p., 1924.  
 A popular discussion of the subject.

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 Present status of peach yellows in Pennsylvania. Pennsylvania  
 State Hort. Soc. Proc. **66**: 75-78, 1925.

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 Three little known diseases of peach. Pennsylvania State Hort.  
 Soc. Proc. **67**: 46-50, 1926.

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 Peach yellows and little peach. Pennsylvania Dept. Agric. Bull.  
**10**(3): 3-16, 1927.

-----, & Holdridge, F. L.  
 Observations on peach yellows. Pennsylvania Acad. Sci. **1**:, 1927.

-----  
 Some comments on the virus diseases. Hints to Potato Growers,  
 1927.  
 Popular notes.

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 Peach yellows report 1927. Pennsylvania Dept. Agric. Bull.  
**11**(6): 3-25, 1928.  
 This paper gives the results of inspection and eradication work.  
 Also a discussion of various phases of the problem.

-----, & Smith F[loyd] F[ranklin]  
 Rate of virus spread in tomato plant. Science n.s. **66**(1716):  
 486-487, 1927.

A short paper giving the results of experiments which indicate that  
 the virus travels through tomato shoots at the rate of from one to  
 two inches per day.

-----, & -----  
 Spread of mosaic virus in tomato plants. Phytopathology  
 (Abstract) **20**(1): 134, 1930.

-----, & -----  
 Spread of mosaic virus in tomato plants. Journ. Bact. **19**(1):  
 23, 1930. (Rev. Appl. Mycol. **9**: 416, 1930.)  
 The virus travels from one to two mm. per hour but the rate varies  
 with the temperature.

-----  
Report on peach yellows inspection in Pennsylvania in 1929.  
Plant Disease Reporter **14**(4) : 33-37, 1930.

**Mc Donald, J[ohn]**

Annual Report of the Mycologist for the year 1922. Kenya  
Dept. Agric. Ann. Rpt. **1922**: 111-115, 1924.

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Report of the Mycologist for the period April 1st. to Dec. 31,  
1921. Kenya Dept. Agric. Ann. Rpt. **1921**: 123-126, 1925.

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Annual Report of the Mycologist for 1928. Kenya Dept. Agric.  
Ann. Rpt. 1928. (Rev. Appl. Mycol. **8**: 632-633, 1929.)

Contains a reference to the mosaic of sugar cane in one district.

**Mc Kay M[arion] B[ertice]**

Mosaic disease of tomatoes. Oregon Agric. Expt. Sta. Crop.  
Pest & Hort. Rpt. **3**(1915-1920) : 179-184, 1921.

A popular description.

-----  
Potato diseases in Oregon and their control. Oregon Agric.  
Expt. Sta. Circ. **24**: 47-51, 1922.

Brief popular notes on mosaic, curly dwarf, leaf roll, spindle sprout,  
and net necrosis.

-----, & **Dykstra, Theodore P[eter]**

Curly top of squash. Phytopathology (Abstract) **17**(1) : 48-49,  
1927.

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Sugar beet curly top virus, the cause of the western yellow  
tomato blight. Phytopathology (Abstract) **17**(1) : 39, 1927.

-----  
Narcissus and tulip diseases. Oregon State Hort. Soc. Ann.  
Rpt. **18**: 137-150, 321-323, 1926.

-----, **Brierley, Philip, & Dykstra, Theodore P[eter]**

Tulip "breaking" is proved to be caused by mosaic infection.  
U. S. D. A. Yearbook **1928**: 596-597, 1929.

Brief account on this disorder known as "breaking". Description  
of methods of inoculation and discussion of insect vectors.

Potato virus diseases: Oregon investigation 1924-1929. Ore-  
gon Agric. Expt. Sta. Bull. **294**: 40 p., 1932.

-----, & **Dykstra, Theodore P[eter]**

This paper gives results of experimental work for six years. *Myzus*  
*persicae* transmits crinkle, rugose, leaf-rolling mosaic and leaf roll but

not mild mosaic; *Illinoia solanifolii* (*Macrosiphum gei*) transmits leaf-rolling mosaic and leaf roll but was not as efficient as some other carriers. It did not transmit mild mosaic, rugose mosaic or crinkle; *Myzus* (*Macrosiphum*) *pelargonii* transmitted leaf-rolling mosaic and leaf roll but did not transmit mild mosaic, crinkle or rugose mosaic. *M. circumflexus* transmitted crinkle, rugose, mosaic and mild mosaic from diseased to healthy potato under insect-proof cages without insects.

-----, & Warner, M. F.

Historical Sketch of Tulip Mosaic or Breaking, The Oldest Known Plant Virus Disease. The Nat. Hort. 12(3) : 179-216, 1933.

A history of this disease and reproductions of old drawings. This is the oldest virus disease of which we have any record. The paper also includes a description of the disease and a very complete bibliography dating back to 1561.

-----, Dykstra, T. P., Morris, H. E., Young, P. A. Richards.

B. L., & Blood, H. L.

Virus and virus-like diseases of the potato in the northwest and their control. U.S.D.A. Circ. 271, 31 p., 1933.

The potato virus diseases studied include mild, crinkle, and rugose mosaic, leaf-roll, witches broom and spindle tuber. Descriptions of them are given and methods of control. Other disorders studied which appears to belong to the virus-disease group were: calico, psyllid yellow and giant hill. Tuber indexing is recommended as the ideal method for eliminating the virus diseases from the seed stock; roguing is also advisable.

McKenny Hughes, A. W.

Aphis as a possible vector of "breaking" in tulip species. Ann. Appl. Biol. 17(1) : 36-42, 1930.

The author suggests *Myzus persicae* Sulz. as a vector of the virus that produces "breaking" in tulips, also associated with "red-streak break." *Macrosiphum gei* Kock possibly carries "break" in a lesser degree and is associated with "white streak".

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Aphides as vectors of "Breaking" in tulips. Ann. Appl. Biol. 18(1) : 16-29, 1931.

Experiments are described. *Myzus persicae* is responsible for the transmission of the disease and *Macrosiphum gei* to a lesser extent. Two types of "breaking" were distinguished.

-----  
Aphids as vectors of "breaking" in tulips II. Ann. Appl. Biol. 21(1) : 112-119, 1934.

The author distinguishes three types of "breaking" e. g. full, self and clotted. Two viruses produced full breaking. Self breaking may be selectively transmitted by the aphis vectors *Myzus persicae* Sulz.

and *Macrosiphum gei* Kock. Self-breaking tulips only transmit self-breaking. At a certain stage of growth tulips cease to be susceptible to infection.

**Mc Kinley, Earl Baldwin**

Filterable virus diseases of plants. *Philippine Journ. Sci.* **39** (1-4) : 344-367, 1929.

Chapter XIV of this work is devoted to "Filterable Virus Diseases of Plants", which is a very comprehensive review of the subject.

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A concept of the ultramicroscopic virus diseases and a classification. *Science. n.s.* **76**(1977) : 449-454, 1932.

A general discussion on virus diseases trying to define and classify them. Although it is not a paper on plant virus disease, it is of interest to students on the subject.

**Mc Kinney, H[arold] H[all,] & Larrimer Walter H[arrison]**

Symptoms of wheat rosette compared with those produced by certain insects. *U.S.D.A. Bull.* **1137**, 8 p., 1923.

Comparative descriptions.

-----, **Eckerson, Sophia H[emison,] & Webb, Robert W[illiam]**

The intracellular bodies associated with the rosette disease and a mosaic-like leaf mottling of wheat. *Journ. Agric. Res.* **26** (12) : 605-608, 1923. (*Phytopathology (Abstract)* **13**(1) : 41, 1923.)

The authors describe the intracellular bodies and discuss their possible nature.

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Intracellular bodies associated with a mosaic of *Hippeastrum Johnsonii*. *Phytopathology (Abstract)* **13**(1) : 41-42, 1923.

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Investigations of the rosette disease of wheat and its control. *Journ. Agric. Res.* **23**(10) : 771-810, 1923.

A description of the disease. The cause is unknown but the disease can be transmitted by the soil. The active agent is destroyed by soil sterilization.

-----  
Certain aspects of the virus diseases. *Phytopathology* **15**(4) : 189-202, 1925.

A comparison of characters of the virus diseases of animals and plants.

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A mosaic disease of winter wheat and winter rye. *Phytopathology* **15**(8): 495-496, 1925. (U.S.D.A. Bull. **1361**, 10 p., 1925.)

A brief note in which the author states that this disease is not carried in the seed. It is found in the soil.

-----, **Webb, Robert W[illiam,] & Dungan, G[eorge] H[arlan]**

Wheat rosette and its control. Illinois Agric. Expt. Station Bull. **264**: 275-296, 1925.

A description of the disease including some cytology. Also studies to determine cause and control.

-----  
Factors affecting the properties of virus. *Phytopathology* **16**(10): 753, 1926.

Virus of a high concentration has a higher thermal death point than a virus of a low concentration. Diluted virus becomes more inactivated at room temperature than undiluted virus.

-----, **Webb, Robert W[illiam]**  
The dilution as a means for making certain quantitative studies of viruses. *Phytopathology* (Abstract) **16**(1): 66, 1926.

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Virus mixtures that may not be detected in young tobacco plants. *Phytopathology* **16**(11): 893, 1926.

Brief report on study of common and yellow mosaic.

-----  
Factors affecting certain properties of a mosaic virus. *Journ. Agric. Res.* **35**(1): 1-12, 1927.

This paper gives a brief review of the literature and the results of experiments with temperature, mixing with extracts from other plants, dilution, etc.

-----  
Quantitative and purification methods in virus studies. *Journ. Agric. Res.* **35**(1): 13-38, 1927.

This paper gives the results of inoculation experiments, purification studies and variability of extracts. "From the results presented it is evident that the methods of culturing and selecting the plant material, and the methods employed in making and manipulating the virus extracts must be standardized just as far as possible to insure reasonably uniform results."

-----  
Virus diseases observed by the Allison V. Armour Expedition. *Phytopathology* (Abstract) **18**(1): 155, 1928.

-----  
A "Streak" of tomatoes produced by a disturbing principle from apparently healthy potatoes in combination with tomato mosaic. *Phytopathology* 18(3):311, 1928.

Brief note giving his observations.

-----  
Further studies on the quantitative virological methods. *Science N. S.* 68(1764):380-392, 1928.

Gives improvements on the methods in use and cautions to insure accuracy. Also brief statements as to the influence of light and temperature.

-----  
Centrifuging filterable viruses. *Science n.s.* 67(1732):271, 1928.

Reviews a note by M. S. Marshal (*Science n. s.* Sept. 2, 1927, page 219) and a paper by himself (*Journ. Agric. Res.* 35:13-38, 1927.)

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Mosaic diseases in the Canary Islands, West Africa and Gibraltar. *Journ. Agric. Res.* 39(8):557-578, 1929. (*Rev. Appl. Mycol.* 9:260, 1930.)

Gives the results of studies on mosaic in the Canary Islands. Also in West Africa.

-----  
Differentiation of virus causing green and yellow mosaics of wheat. *Science n. s.* 73(1902):650-651, 1931.

Wheat mosaic can be resolved into two distinct types, yellow and green. The rosette is associated with the green but not the yellow type.

-----  
A mosaic of wheat transmissible to all cereal species in the tribe *Hordeae*. *Journ. Agric. Res.* 40(6):547-556, 1930.

The author records ten species as susceptible to this disease. Each species contains resistant strains. Rosette was found associated with mosaic and is considered a phase of the disease.

-----  
Further studies on virus purification. *Phytopathology (Abstract)* 21(1):118, 1931.

-----  
Four apparently undescribed mosaics which go to tobacco. *Phytopathology (Abstract)* 21(1):118, 1931.

**Mc Larty, H[arold] R[oss]**

Suspected mosaic disease of sweet clover. *Phytopathology* 10(11):501-503, 1920.

A brief note.



Witches' broom of potatoes. *Sci. Agric.* **6**(11):395, 1926.

**Mc Lean, W.**

The control of leaf-roll disease in potatoes by the diagnosis of "Primarily infected" tuber. *Journ. Agric. Sci.* **16**(1):149-157, 1926.

Healthy tubers lose weight when dried more rapidly than primarily infected tubers.

Effect of leaf-roll disease in potatoes on the composition of tuber and "mother tuber". *Journ. Agric. Sci.* **16**(2):318-324, 1926.

A chemical study of the disease.

**Mc Murran, S[tockton] M[osby]**

Pecan rosette in relation to soil deficiencies. *U. S. D. A. Bull.* **756**, 11 pp. 1919.

**Mc Murtrey Jr., J[ames] E[dward]**

Effect of the mosaic disease on yield and quality of tobacco with suggestions for control. *Maryland Agric. Expt. Sta. Bull.* **302**:147-158, 1928.

This paper gives valuable data as indicated in the title.

Effect of mosaic disease on yield of tobacco. *Journ. Agric. Res.* **38**(5):257-268, 1929.

Very similar to the preceding paper.

**Mc Rae, W[illiam]**

Report of the Imperial Mycologist. *India Agric. Res. Inst. (Pusa) Sci. Rpts.* **1921-22**:44-50, 1922.

Mosaic disease of sugar cane in India in 1925. *Agric. Journ. India* **21**(3):198-202, 1926. (*The Planter & Sugar Manuf.* **77**(17):331-332, 1926. *Mundo Azucarero* **14**(5):152-154, 1926. *Rev. Appl. Mycol.* **5**:695-696, 1926.)

Report about the conditions of sugar-cane varieties in regard to mosaic disease and the spread of it in India. Contains also a considerable amount of historical data concerning the disease in India.

Report of the Imperial Mycologist. *India Agric. Res. Inst. (Pusa) Sci. Rpts.* **1926-27**:45-55, 1928. (*Rev. Appl. Mycol.* **7**:302-304, 1928.)

Contains a statement concerning mosaic on sugar-cane seedlings.

-----, & Subramanian, L[ekshminarayanapuram] S[ubramania]

A further note on the mosaic disease of sugar Cane. Agric. Journ. India 23(4) : 239-255, 1928. (Rev. Appl. Mycol. 8: 63, 1929.)

A description of the disease, its distribution in India and the results of varietal tests.

-----  
Effect of mosaic on the tonnage and juice of sugar cane in Pusa, Part II. Indian Journ. Agric. Sci. 2: 378-384, 1932.

The results of carefully controlled plot experiments. The germination, yield, juice and sucrose was lower in diseased than in healthy cane.

-----  
Experiment to test the difference in yield between sugar cane with mosaic disease and free from mosaic disease during the season 1930-31 in Pusa. Fourth Cong. Intern. Soc. Sugar Cane Technologist, Puerto Rico, 1932. Bull. 28, 4p., 1933.

Account of observations and results of experiments made by the author.

**Mc Rostie G[ordon] P[eter]**

Inheritance of disease resistance in the common bean. Journ. Amer. Soc. Agron. 13(1) : 15-32, 1921.

**Mc Whorter, Frank P[aden]**

The nature of the organisms found in Fiji galls of sugar cane. Philippine Agric. 11(4) : 103-111, 1922. (Louisiana Planter 70: 148-150, 1923. Rev. Path. Veg. & Ent. Agric. 10: 99, 1923.)

A very careful study of the life history of the organisms which he describes under the name of *Phytamoeba sacchari*.

-----  
The mosaic situation. Philippine Agric. 12(2) : 93-95, 1923.

A summary of several papers on mosaic disease.

-----  
Cause and control of Fiji disease of sugar cane. Agric. Journ. India. 18: 651-652, 1923.

A popular paper.

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Further report on rose mosaic in Oregon. U.S.D.A. Plant Disease Reporter. 15(1) : 1-3, 1931. (Mimeographed).

Description of the disease and wild hosts are given.

Narcissus "gray disease" is a transmissible mosaic. Oregon Agric. Expt. Sta. Dept. Bot. Tech. Paper **180**, 1932. (Florists' Exchange. **79**(14):11, 1932.)

Account of the transmissibility and control of narcissus "gray" or mosaic disease.

....., **Weiss, Freeman**

Diseases of narcissus. Oregon Agric. Expt. Sta. Bull. **304**, 41 p. 1932.

A brief reference to virus diseases.

Narcissus mosaic symptoms. Phytopathology (Abstract) **22** (12): 998, 1932.

A preliminary analysis of tulip breaking. Phytopathology (Abstract) **22**(12): 998, 1932.

**Medalla, M[ariano] G., & Reyes, G[audencio] M.**

Fiji disease of sugar cane. Philippine Farmer **7**:3, 5, 1921.

A popular discussion of the subject and recommendations for a domestic quarantine, the use of resistant varieties and disease-free seed.

Fiji disease of sugar cane in the Philippine Islands. Phytopathology **11**(6): 251-252, 1921.

Records of the disease and recommendations for quarantine.

....., & **Serrano, F[elicísimo] B.**

Losses from mosaic disease. Sugar Cent. & Planters' News **3** (11): 543-544, 1922.

Diseases of sugar cane in the Philippines. Sugar Cent. & Planters' News **4**(8): 390-392, 1923.

Popular.

**Meer, Jikke H. H. van der.**

(A study of the virus from the apparently healthy potato variety. "Green mountain".) Zentral-blatt für Bakteriologie, Parasitenkunde und Infektionskrankheiten, II. Abt. Bd. **87**, 1932.

The author gives the results of extensive experiments which she summarizes in part as follows: "The apparently healthy potato variety 'Green Mountain', is carrier of a virus, that produces different symptoms of disease depending on the host and the stage of development of the leaves." "After inoculations with juice of Green Mountain-tuber or leaves, two varieties of *Capsicum annuum* L. reacted by necro-

sis; *Datura Stramonium L.*, tomato, tobacco and *Hyoscyamus niger L.* by distinct mosaic; *Physalis Alkekengi L.* and *Solanum nodiflorum* Jack. by mild mosaic; whereas *Atropa Belladonna L.*, *Solanum Dulcamara L.*, *Solanum Capsicatum L.*, and *Cyphomandra betacea* Sendt. showed no symptoms at all." The author gives much other interesting and valuable data.

**Megaw, W. J.**

Notes on experiments related to loss of vigor in stocks of potatoes. Journ. Min. Agric. North Ireland. 1: 37-45, 1927.

**Melchers, L[eo] E[dwards]**

The mosaic disease of the tomato and related plants. Ohio Nat. 13(8): 149-173, 1913. (Contrib. Bot. Lab. Ohio Univ. No. 74.)

Reviews the work of other students and gives the results of his own studies on histology.

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A preliminary report on raspberry curl or yellow. Ohio Nat. 14(6): 281-288, 1914.

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The mosaic or white pickle disease of cucumbers. Kansas State Hort. Soc. Trans. 34: 102-104, 1918.

A description of the disease in greenhouse. The losses are estimated at 20 per cent.

-----, & Hurley, Fellows.

Wheat mosaic in Kansas, U.S.D.A. Br. Plant Indus. Rpt. 14: 158, 1930.

-----  
Wheat mosaic in Egypt. Science n.s. 73(1882): 95-96, 1931.

Field observations were made by the author. He believes that rosette of wheat and barley are associated with mosaic. From observations he concluded that the United States virus diseases of wheat are distinct from those in Egypt.

-----  
Plant disease problems in Egypt. Trans. Kansas Acad. Sci. 35: 38-62, 1932.

Brief notes on the progress of the work on the following virus diseases: Wheat mosaic and rosette, mosaic of *Vicia faba* and *Phaseolus vulgaris*, mottled and "fern leaf" forms of mosaic on tomatoes, mosaic on pepper (*Capsicum annum*), sweet melon and sugar cane, streak on sugar cane and banana bunchy top.

**Melhus, Irving E.**

Notes on mosaic symptoms of Irish potatoes. Phytopathology (Abstract) 7(1): 71, 1917.

-----  
 Mosaic studies. *Phytopathology* (Abstract) **12**:(1) 42, 1922.

-----, & Henderson, W. J.

The yellow dwarf of onions. *Phytopathology* (Abstract) **19**(1): 86, 1929.

-----, Reddy, C[harles] S[teven], Henderson, W. J., & Vestal, Edgar F[red]

A new virus disease epidemic on onions. *Phytopathology* **19**(1): 73-77, 1929.

A discussion of this disease, including description, estimate of losses and proof that it is due to a virus.

**Mencacci, M.**

Le malattie delle degenerazione della patate. (The degeneration diseases of the potato.) *Biol. Mens. Inform. Not. Rom.* **5** (7-12): 53-59, 1925.

**Mendiola, N[emesio] B[lanco], & Unite, Juan O.**

Sugar cane breeding in the College of Agriculture. *The Philippine Agric.* **13**(3): 115-128, 1924.

-----, & Ocfemia, G[erardo] O[ffimaria]

The work of breeding resistant crop plants at the College of Agriculture at Los Baños. *The Philippine Agric.* **15**(3) 117-128, 1929. (*Rev. Appl. Mycol.* **6**: 43, 1926.)

Contains brief statements concerning work for the control of Fiji disease of sugar cane and bunchy top of *Musa textilis*.

**Menéndez Ramos, R[afael]**

El suelo no puede ser responsable del matizado de la caña. (The soil can not be responsible for the mottling of sugar cane.) *Rev. Agric. Puerto Rico.* **11**(3): 13-20, 1923.

The soil is not the cause of the disease.

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 Sigamos con el matizado. (Let us continue with the mottling disease.) *Rev. Agric. Puerto Rico.* **11**(5): 23-28, 1923.

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 Sugar cane disease. *Ins. Expt. Sta. Puerto Rico Ann. Rpt.* **1922-23**: 21-22, 1923.

A brief record.

-----  
 La cal como enmienda (Lime as an amendment). *Insular Expt. Station, Porto Rico. Circ.* **74**, 17 p., 1923.

Discussion on the agricultural uses of lime. The author discusses the popular belief that lime is a cure of sugar-cane mosaic. He declares that lime is not a cure for the disease.

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Estudios sobre el mosaico de la caña. Movimiento del virus a través del tallo en el caso de infecciones secundarias. (Studies on sugar cane mosaic disease. Movement of the virus through the stalk in cases of secondary infections.) *Rev. Agric. de Puerto Rico.* 13(4) : 219-226, 1924 (*Rev. Appl. Mycol.* 4 : 244. *Louisiana Planter & Sugar Manuf.* 73(25) : 488-489, *Rev. Agric. Com. & Trab. Cuba* 7(5) : 31-33, 1925.)

All the cuttings from a stalk of cane on which only a part of the leaves are mottled, will probably produce diseased plants.

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Mosaic disease and methods of control. *Planter & Sugar Manuf.* 75(25) : 487-498, 1925. (*Rev. Appl. Mycol.* 5 : 329, 1925.)

A popular discussion of the subject.

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La enfermedad mosaico y los métodos de combatirla. (The mosaic disease and methods to control it.) *El Mundo Azucarero* 13(8) : 241-245, 1926.

A translation of the previous citation. *Planter & Sugar Manuf.* 75 : 487-489. 1925.

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The control of sugar cane mosaic in the West Indies. *Ref. Book of the Sugar World (The Planter & Sugar Manuf.)* 5 : 38-41, 1927.

A short paper giving extensive data on field studies.

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El comportamiento de la enfermedad del mosaico en las variedades POJ-2714, 2725, y 2727 en la Provincia de Oriente. (Behavior in regard to the mosaic disease of the sugar cane varieties POJ-2714, 2725, and 2727 in the Province of Oriente.) *Suplemento de la Memoria de la Segunda Conferencia Anual Asociación de Técnicos Azucareros de Cuba.* Dec. 1928, p. 35-62, 1928. (*Planters & Sugar Manuf.* 81(6) : 101-104, 1928.)

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The calculation of mosaic infection in highly resistant canes. *Int. Sugar Journal (Abstract)* 35(419) : 428, 1933.

Paper presented at the Sixth Annual Conference of the Association of Sugar-Cane Technologists of Cuba, held in December, 1932. The author grouped the varieties according to the behaviour of the disease on each, thus P. O. J. 2725 and Java-Barbados hybrids derived from it in one group and B. H. 10(12), S. C. 12(4) and Cristalina in

another. He establishes the stalk unit as measurement in calculating mosaic infection against the stool unit, which he declares is misleading in determining the relative commercial immunity. He gave a table comparing the results of both unit basis. He states that incidentally, it may be noted that many of the crosses of P. O. J. 2725 and S. C. 12(4) are more resistant than the female parent in spite of the fact that the male parent is very susceptible. Further, the two varieties M 28 and F. C. 916 show a relatively high susceptibility in contrast with a practical immunity recorded in Puerto Rico.

**Menezes Sobrino, A.**

O mosaico da canna. (The mosaic de cane.) Bol. Agric. Bahia (Brazil) 1926:25-28, 1926.

**Merkel, L[udwig]**

Beiträge zur Kenntnis der Mosaikkrankheit der Familie der *Papilionaceae*. (Contribution to the knowledge of the mosaic disease of the family of the *Papilionaceae*.) Zeitschr. für Pflanzenkrankh. (Pflanzenpath.) u. Pflanzenschutz. 39(8-9):289-347, 1929. (Rev. Appl. Mycol. 9(2):120-121, 1930.)

This paper contains a great deal of data concerning mosaic of legumes.

**Merkenschlager, F[ritz]**

Zur Biologie der Kartoffel. II Mitteilung. Zur Pathologie der Blattrollkrankheit. (On the biology of the potato. Note II. On the pathology of the leaf-roll disease.) Arb. Biol. Reichsanst. für Land- und Forstwirtschaft. 17(4):345-376, 1929. (Rev. Appl. Mycol. 9(2):122-123, 1930.)

A discussion of the histology of the diseased plant. Also a study of soil relationships.

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Zur Biologie der Kartoffel. (On biology of the potato) 4 Mitt. zur Pathologie des Abbaus. Arbeit. Biol. Reichsanst. 17:435-458, 1930.

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Kartoffelprobleme. Die Schwarzfärbung des Kartoffelfleisches. Das Abbauproblem. Über die sog. Viruskrankheiten der Kartoffel. Kartoffelban, 14:61-63, 73-75, 1930.

-----, & **Klinkowski, M[aximilian]**

Zur Biologie der Kartoffel. VI Mitteilung. Der Rückzug der Kartoffelsorte *Magnum Bonum* nach Skandinavien in Lichte der ökologischen Abbauphänomene. (On the biology of the potato. Note VI. The retreat of the potato variety *Magnum Bonum* into Scandinavia in the light of the ecological de-

generation theory.) Arb. Biol. Reichsanst. für Land-und Fortwirtsch. **18**(4): 431-463, 1931.

Comparison of the potato variety in regard to its behaviour in Germany and Scandinavia.

-----  
Neue Untersuchungen über die Ursache der Degeneration der Kartoffel. (New investigations on the cause of degeneracy of the potato.) Forschungen u. Fortschritte **8**: 58, 1932.

**Merrill, E[lmer] D[rew]**

Breeding sugar beets for resistance to curly top. California Agric. Expt. Sta. Ann. Rpt. **1928-29**: 64, 1929. (Rev. Appl. Mycol. **9**: 424, 1930.)

Notes in this report of the work done by the corresponding department.

**Meulen, J. G. J. van der**

Voorloopig onderzoek naar de specialisatie en de infectiebronnen der mosaiekziekten van landbouwgewassen. (Preliminary investigations in the specialization of infection process of mosaic disease of cultivated plants.) Tijdschr. Plantenz. **34**(5): 155-176, 1928. (Inst. Phytopath. Lab. Mycol. en Ardappelonderzoek Meded. **35**: 155-176, 1928. Zeitschr Pflanzenkrankh. **38**: 326-328, 1928.)

This paper gives the results of inoculation experiments.

**Meyer, F. H.**

Die Kräuselkrankheit der Kartoffel. (The curl disease of the potato.) Ill. Landw. Zeitg. **42**: 295, 1922.

**Meyer, H[ans]**

Das Chlorose-und Panaschürenphänomen bei Chlorellen. Beih. Bot. Centralbl. **49**: 496-566, 1932.

**Milbraith, D[avid] G[allens]**

Mosaic diseases of plants. California Cultivator **62**: 541, 1924. Popular.

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Plant Pathology. California Dept. Agric. Monthly Bull. **17** (12): 683-687, 1928. (Rev. Appl. Mycol. **9**(1): 23, 1930.)  
Virus diseases of roses are reported.

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Infectious chlorosis of the rose. Western Florist **13**(29): 29-30, 1930.



A discussion of the reported infections chlorosis of the rose. California Dept. Agric. Monthly Bull. **19**(8):535-544, 1930.

No proof of the presence of an infective material has been presented. The author agrees that if the condition is a specific disease then it differs from all other known virus diseases.

**Miles, Herbert W[illiam]**

Potato leaf-curl. Kirton Agric. Inst. Ann. Rpt. **1923**:33-37, 1923.

Data on yields.

**Miles, L[ee] E[llis]**

The mosaic of sugar cane in Mississippi. Mississippi Agric. Expt. Sta. Bull. **191**, 11 p. 1920.

Gives symptoms, distribution, quarantine and control measures.

**Milhoffer, S.**

Die mosaikkrankheit des tabaks. (The mosaic disease of tobacco) D. Landw. Presse **30**:600, 1903.

**Miller, Justus**

Northern Ontario seed potato trade. Potato Mag. **1**:33, 34, 1919.

**Miller, P[hilip] & Martyn, T[homas]**

Gardeners and Botanists' Dictionary. **4**:(Under Solanum). 1807.

**Milward, J[ames] G[arfield]**

Mosaic control by tuber indexing methods applied to the Triumph variety. Proc. Ann. Meetg. Potato Ass'n Amer. **14**:88-91, 1928.

**Mitra, M.**

Disease of plants. Impt. Inst. Agr. Res. Pusa Sci. Rept. **1929-30**:58-70, 1930.

Reports sterility of "rahar" *Cajanus indicus* of possible virus origin.

**Mogendorff, N[ico]**

Fern-leaf of tomato. Phytopathology **20**(1):25-46, 1930. (Rev. Appl. Mycol. **9**:417, 1930.)

The typical fern-leaf symptoms were not produced with the virus from tomato and tobacco mosaic plants. It was rarely produced by artificial inoculation with cucumber mosaic and regularly by *Myzus persicae* which had fed on mosaic cucumber plants.

**Molisch, Hans**

Das Plasmamosaik in den Raphidenzellen der Orchideen *Haemaria* und *Anoectochilus*. (Plasma mosaic in raphid cells of the orchids *Haemaria* and *Anoectochilus*.) Sitzungsher. K. Akad. Wiss. Wien (Math.—Nat. Kt.) **126**: 231–242, 1917.

**Molz, E.**

Auftreten der Mosaikkkrankheit bei zuckerrüben. (The mosaic disease threat to sugar beets.) Landw. Wachenschr. Sachsen u. Anhalt **28**: 637, 1926.

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 Mosaikkkrankheit der Zuckerrübe eine in Deutschland neue und gefährliche Zuckerrübenkrankheit. (Mosaic disease of sugar beet a new and dangerous disease of sugar beet.) Deutsch. Landw. Presse **53**(40): 501, 1926. (Landw. Wochenschr. Prov. Sachsen u. Anhalt **28**: 688–689, 1926.)

-----  
 Eine neue und gefährliche Zuckerrübenkrankheit. Die Mosaikkkrankheit der Zuckerrübe. (A new and dangerous disease of sugar beet. The mosaic disease of sugar beet.) Die Umschau **31**: 293–296, 1927.

**Moore, E[nid] S[tella]**

Diseases of Virginian tobacco in South Africa. Journ. Dept. Agric. Union S. Africa. **12**: 428–455, 1926.

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 Mosaic of Virginia tobacco. Farming in South Africa. **1**(12): 450–452, 1927.

A popular discussion.

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 A virus disease of tobacco in South Africa. Nature **129** (3258): 544, 1932.

The disease resembles but is not the same as ringspot. It can be transmitted by grafting and by thrips (*Frankliniella* sp.) and rarely by needle punctures but not by the common green aphids. It appears to be the same as the spotted wilt of the tomato in Australia and virus diseases of *Datura Stramonium*, *Physalis* spp. and *Nicandra physalodes*.

-----  
 The kromnek or Kat River disease of tobacco and tomato in the East Province (South Africa). South Africa Dept. Agric. Sci. Bull. **123**, 28 p., 1933.

Extensive account of this virus disease of wide-spread occurrence in South Africa.

- Important to tobacco growers. The crinkly dwarf menace of tobacco. *Farming in South Africa* 8(88):276, 1933.  
Popular notes warning the tobacco growers about the crinkly dwarf disease of tobacco, practically unknown in South Africa a few years ago. Symptoms, etiology and control measures are given.

**Moquette, J. P.**

Sets over Sereh en over de Gelestrepenziekte. *Arch. voor de Java Suiker Indus.* 2:346-356, 1894.

**Mordaunt, Charles**

Experiments in practical agriculture. *Young's Ann. Agric.* 14:444-450, 1790.

Reference to a potato disease which may be due to a virus.

**Mori, Nello**

Sulla natura dei filtrabili. (The nature of filterable virus.)  
*Reale Inst. d'incoraggiamento di Napoli*, n. d.

**Morren, E.**

Contagion de la panachure. (Contagion variegation) *Belg. Hort.* 20:14-19, 1870.  
Historical value only.

**Morris, H[arry] E[lwood]**

Virose or degeneration disease of potatoes in the northwest.  
*Proc. Ann. Meeting Potato Ass'n Amer.* 15:199-203, 1929.

-----, & **Young, P[aul] A[llen]**

Potato diseases in Montana. *Montana Agric. Expt. Sta. Bull.* 227, 51 p., 1930.

The object of this paper is to facilitate the identification of potato diseases. Among those described and tabulated there are a considerable number of virus diseases.

**Morse, E. W.**

On the power of some peach trees to resist the disease called "Yellows" *Bul. Bussey Inst.* 3:12, 1901.

**Morse, Stanley F[letcher]**

Mosaic neglect dangerous. *Facts. About Sugar* 19(2):42, 1924.

**Morse, W[arner] J[ackson]**

Potato disease in 1907. *Maine Agric. Expt. Sta. Bull.* 149:289-330, 1908.

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Observations upon a yellow disease of the fall dandelion. *Science* n.s. **23**(715): 348, 1908.

Record of the occurrence of a disease on *Leontodon autumnale* Linn. in Maine, which the author compares with aster yellows and of course has the characteristics of a virus disease.

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Recent progress in potato diseases work in Maine. *Agric. of Maine*, 1916, p. 246-258, 1916.

**Morstatt, H[ermann Albert]**

Uebersicht über die Krankheiten und Schädling der Kulturpflanzen. (Review about diseases and pest of cultivated plants.) *Der Pflanze* p. 184-194, 1913.

Notes on virus diseases of cassava and peanuts.

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Die Degeneration bei unseren Kulturpflanzen. (Degeneration in our crop plants.) *Blätt Pflanzenbau. u. Pflanzenzücht.* **1**: 49-51, 1923.

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Viruskrankheiten der Pflanzen. (Virus diseases of plants.) *Pflanzenbau* **1**: 57-58, 1924.

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Entartung, Attersschwäche und Abban bei Kulturpflanzen, insbesondere der Kartoffel. (Degeneration, senile decay, and running out of cultivated plants, especially the potato.) Verlag. Dr. F. P. Datterter & Co., Freising-München, 74 p. 1925.

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Der gegenwärtige Stand unserer kenntnis der Degeneration. *Angeu. Botanik* **13**: 81-83, 1931.

**Mosséri, V[ictor M.]**

La chlorose de la canne á sucre en Egypte. (Sugar cane chlorosis in Egypt.) *Bull. Inst. Egypte* **3**: 1-12, 1921. (*Bull. Union Agric. Egypte* **18**: 75-86, 1921.

**Mottet, S[éraphin Joseph]**

Dégénérescence de la Pomme de terre par le semis. (Degeneration of the potato by the seed.) *Journ. Agric. Pract.* **31**: 1, 1917.

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La dégénérescence des pomme de terre. (Degeneration of potato.) *Journ. Agr. Pract.* **31**: 327-329, 1918.

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 La dégénérescence des pomme de terre. (Degeneracy of potatoes.) Journ. Agric. Pract. n.s. (France) **33**(14): 237-239, 1920.

**Moutia, A.**

Sur un des modes de transmission de la mosaïque du tabac. (A manner of tobacco mosaic transmission.) Rev. Agric. Ile Maurice **40**: 179-180, 1928.

**Muir, Frederick Arthur Godfrey, & Swezey, Otto H[erman]**

Entomology. Report Comm. Experiment Station. Hawaii Sugar Planters' Association **1925-26**: 16-29, 1927. (Rev. Appl. Ent. ser. A **15**: 431, 1927.)

**Mulder, E[mile]**

Cultivation of tobacco in Sumatra. U. S. D. A Div. Veg. Phys. & Path. Report **58**, 1898.

**Müller,**

Vechselseitige Uebertragbarkeit der verschiedenen Viruskrankheiten des tabaks, der tomate und der Kartoffel innerhalb der Familie der Solanaceen. Inaugural dissertation, Bonn. 72 p., 1930.

**Muller, D.**

Die assimilation der blattrollkranken kartoffelpflanzen. (The assimilation of leaf roll-diseased potato plants. *Planta*. **16** (1): 10-15, 1932.

The stomatal apertures were narrower in diseased than in healthy plants, the respiratory intensity was equal but the carbon dioxide assimilation was much less in the diseased plants.

**Muller, H[ans] C[arl,] & Störmer, K[urt]**

(Investigations in plant diseases.) Ber. Agric. Chem. Kontroll u Vers. Stat. Pflanzenkrank. Prov. Sachsen, p. 71-84, 1910.

**Muller, H. R. A.**

Mosaiekziekte bij cassave. (Mosaic disease of cassava.) Inst. vor Plantenziekten Bull. **24**: 1-17 1931.

*Manihot utilissima* at Buitenzorg, Java, showed symptoms of mosaic.

**Müller, K[url] Rudolf**

Eine neue Rübenkrankheit. (A new beet disease.) Deutsche Landw. Presse **56**(33): 469-470. 1929 (Rev. Appl. Mycol. **9** (3): 153-154, 1929. D. Deutsche Zuckerindustr. **54**: 1168-1169, 1929. Landw. Wochenschr., Halle **87**: 636-637, 1929.)

**Müller, W.**

Mosaikkrankheit su Himbeeren. (Mosaic Disease of raspberry.)  
Mach-richenbl. Deutsch. Pflanzenschutzd. 7(7): 65-66, 1927.

**Mulvania, Maurice**

Cultivation of the virus of tobacco mosaic by the method of  
Olitsky. Science 62(1593): 37-38, 1925.

The author conducted tests by the methods given by Olitsky but  
failed to confirm his results.

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A special application of collodion sacs (Tobacco mosaic). Ab-  
stracts of Bact. 9(1): 11-12, 1925.

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The destructive action of certain bacteria on the virus of tobacco  
mosaic. Journ. Bact. 11(2): 98, 1926.

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Dialysability of the virus of tobacco mosaic. Phytopathology  
16(11): 853-872, 1926.

Direct sunlight destroyed 90 per cent in 36 hours. Ultra-violet rays  
gave complete inactivation in one hour. X-Rays had no effect. 80°  
C. for 20 days did not completely inactivate. Complete inactivation  
by 88° to 90° C. for 10 minutes. Was not recovered from blood  
stream of a rabbit. Was inactivated when mixed with blood of a rab-  
bit. Can pass through certain collodion sacs but not through others.  
Certain bacteria are destructive to it.

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Studies on the nature of the virus of tobacco mosaic. Phyto-  
pathology 16(11): 853-871, 1926.

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Root inoculation with the virus of tobacco mosaic. Journ. of  
Bact. (Abstract) 19(1): 23-24, 1930. (Rev. Appl. Mycol. 9:  
414, 1930.)

This paper gives the results of efforts to inoculate tobacco plants  
through the roots, all of which were negative. Inoculations through  
the leaves gave 80 to 90 per cent positive infections.

**Mumford, Edward Philpott**

On the curly top diseases of the sugar beet: A biochemical and  
histological study. Summary of results.. Ann. Appl. Biol. 17  
(1): 28-35, 1930. (Rev. Appl. Mycol. 9: 573, 1930.)

The sap of the resistant strains is more concentrated in electrolytes  
and less concentrated in non-electrolytes and total solids. With one  
exception the leaves were more acid. The disease caused a decrease

of sugar in both leaves and roots of resistant strains, but in the susceptible strains it caused an increase in the leaves and a decrease in the roots. The amount of sugar may explain the preference of the insect for the susceptible plants. Phloem necrosis is a symptom of curly top.

The cuticle and epidermis are thicker in the resistant than in the susceptible plants.

**Muncie, J[esse] H[oward]**

The relation of cucurbit mosaic to wild catnip. Proc. Iowa Acad. Sci. 29:346, 1922.

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 Yellow dwarf and moron disease of potato in Michigan. Proc. 18th Ann. Meeting Potato Assoc. Amer. 1931:70-73, 1932.

Field studies and yield of potatoes with yellow dwarf. A description of the moron disease.

**Mungomery, R. W., & Bell, Arthur F[rank]**

Fiji disease of sugar cane and its transmission. Queensland Br. Sugar Expt. Sta. (Div. Path.) Bull. 4, 28 p., 1933.

The history and distribution of the disease, symptoms and a full discussion of experimental studies which led to the discovery that the disease is transmitted by *Perkinsiella saccharicida*.

**Muravjev, V. P.\***

Die mosaikkrankheiten der Zukerrübe. (The mosaic disease of sugar beet.) Saatucht. Allruss. Zuckertrust, 280 p. 1930.

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 Mozaichnye Bolezni Sakharnoi Svekly. (Mosaic disease of the sugar beet.) Kiev., S.S.U. Soiuzsakhara 286 p., 1930.

This work includes contributions from several workers on the subject which are inserted in this bibliography under their corresponding names.

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 (Materials for studying the mosaic of the sugar beet.) In his Mozaichnye Bolezni Sakharnoi Svekly (Mosaic disease of sugar-beet.) Kiev, S. S. U. Soiuzsakhara p. 113-130, 1930. (English Abstract p. 128-130.)

Description of the behavior of the disease and its effect on yields. No resistant variety has been found.

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 (Diagnosis of the mosaic diseases of the sugar beet.) In his Mozaichnye Bolezni Sakharnoi Svekly (Mosaic diseases of

\* Also—Muraviov, V. P.

sugar beet.) Kiev, S.S.U. Soiuzsakhara p. 131-140, 1930.  
(Eng. Abstract p. 138-140.)

“A decimal system has been adopted for economy of energy and time in expressing the appearances of designated areas descriptively in the case of mosaic plant surfaces.”

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(General sketch of mosaic of sugar beet.) In his Mosaichnye Bolezni Sakharnoi Svekly (Mosaic diseases of sugar beet.) Kiev, S.S.U. Soiuzsakara p. 179-262, 1930. (English translation p. 221-261.)

Review of the publications on sugar-beet mosaic in Russia and elsewhere.

**Murphy, Paul A[loysius]**

Mosaic disease of potatoes. Agric. Gaz. of Canada. 4:345-349, 1917.

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The economic importance of mosaic of potatoes. Phytopathology (Abstract) 7(1):72-73, 1917.

-----, & **Wortley, E[dward] J[ocelyn]**

Determination of the factors inducing leaf-roll of potatoes, particularly in northern climates. Phytopathology 8(4):150-154, 1918.

Recommends that varieties should be separated by spaces of six feet.

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Disease of the potato. Nova Scotia Fruit Growers' Assoc. Ann. Rpt. 54:180-190, 1918.

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Potato inspection service. Agric. Gaz. of Canada 6(3):1-7, 1919.

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Some constitutional diseases of the potato. Canada Hort. 42(1):9, 1919.

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New or little-known diseases of potatoes which cause running-out of seed. Phytopathology (Abstract) 10(5):316-317, 1920.

-----, & **Wortley, E[dard] J[ocelyn]**

Relation of climate to the development and control of leaf-roll of potato. Phytopathology 10(9):407-414, 1920.

Gives the results of planting in different places and recommends the use of seed from disease-free districts.



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Investigations of potato diseases. Canada Expt. Farms. Bull. **44**, 2 ser., 86 p., 1921.

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Some recent work on leaf-roll and mosaic. Roy. Hort. (London). Int. Potato Conf. Rpt. **1921**: 145-152, 1922.

      Gives the results of studies with potato leaf-roll and mosaic on starch translocation and climate.

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Leaf-roll and mosaic, two important diseases of potato. Ireland Journ. Dept. Agric. **22**: 281-284, 1922.

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Leaf-roll and mosaic of the potato in Ireland. Journ. Nat. Inst. Agric. Bot. **1**: 47-50, 1922.

      A description of symptoms and results of experiments with insects.

-----  
On the cause of rolling in potato foliage; and on some further insect carriers of the leaf-roll disease. Sci. Proc. Roy. Dublin Soc. **17**(20): 163-184, 1923

      The author reports an excess accumulation of starch in the leaves as a constant symptom of leaf-roll. The disorganization of the phloem was found in plants that had been attacked by *Phytophthora* and by eel-worms.

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Virus diseases of potatoes. Nature (London) **112**(2808): 293, 1923. (Brit. Ass'n Adv. Sci. Rpt. (Abstract) **91**: 492, 1923.)

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Investigations on the leaf-roll and mosaic diseases of the potato. Ireland Journ. Dept. Agric. & Tech. Instruction **23**(1): 20-34, 1923.

      A brief history of these diseases with the results of the studies on the influence of environment and on insect vectors.

-----, & Mckay, Robert.

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Investigations on the leaf-roll and mosaic diseases of potato. Ireland Journ. Dept. Agric. **23**(4): 344-364, 1924.

      It appears that the transmission of the viruses is not due to aphids alone. There is a discussion of symptoms for the purpose of distinguishing diseases which are confused.

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Virus diseases of potatoes. British Assoc. Adv. Sci. Rpt. (Abstract) **1923**: 492, 1924.

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Investigations on the leaf-roll and mosaic diseases of the potato. Ireland Journ. Dept. Agric. & Lands. **25**(2): 138-154, 1925.

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Investigations on the leaf-roll and mosaic diseases of the potato.  
Irish Free State Dept. Lands & Agric. Journ. **26**(1):1-3,  
1926.

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Methods for investigating the virus diseases of the potato and  
some results obtained by their use. Sci. Proc. Roy. Dublin  
Soc. **18**(10-16):169-184, 1926.

The author describes methods and gives the results of transmission  
experiments. Four insects were found to be carriers: *Myzus persicae*,  
*M. pseudosolani*, *Macrosiphum solanifolii*, and *Calocoris bipunctatus*.

-----, & -----  
Investigations on the leaf-roll and mosaic diseases of potato.  
Irish Free State Dept. Lands & Agric. Journ. **26**(4):295-  
305, 1927.

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The insect vectors of the leaf-roll disease of potato. Sci. Proc.  
Roy. Dublin Soc. **19**(20-28):341-353, n. s., 1929. (Rev.  
Appl. Mycol. **9**(3):197-198, 1930.)

This paper is an extension of previous studies on this subject.

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La production d'un "crinkle" des pommes de terre par un  
mélange de virus. (The production of "crinkle" of potato  
by a crossing of virus.) Rapp. Deuxieme Cong. Intern.  
Path. Comp. **1**:448, 450, 1931.

Based on three years' experiments the authors state that potato  
crinkle was produced when simple mosaic was introduced into plants  
carrying a particular latent virus. The synthetic crinkle thus pro-  
duced persisted in a form indistinguishable from natural crinkle.  
During five years experimentation no difference in other respects has  
been revealed between the two diseases.

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A critical review of some recent work on the occurrence of virus  
complexes in the potato. Sci. Proc. Roy. Dublin Soc. n. s.  
**20**(18):193-210, 1932.

-----, & McKay, Robert  
The compound nature of crinkle, and its production by means  
of a mixture of viruses. Sci. Proc. Roy. Dublin Soc., **20**  
(20):227-247, 1932.

This paper is the result of three years' work which indicate the  
compound nature of this disease.

-----, & -----

A comparison of some European and American virus diseases of the potato. *Sci. Proc. Roy. Dublin Soc.* **20**(27): 347-358, 1932.

These studies were made for the purposes of determining the diseases that were common to both continents and the diseases that are distinct.

**Murray, J. C.**

Report of Field Assistant. *Australian Sugar Journ.* **16**: 607-609, 611, 1924.

Varietal resistance to mosaic disease in sugar cane.

**Murray, P[ercival] W[aterhouse]**

Investigations on the leaf-roll and mosaic diseases of potato. *Ireland Journ. Dept. Agric.* **25**: 1-8, 1926.

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 Sugar-cane diseases, Jamaica. *Jamaica Dept. Agric. Ann. Rpt.* **1920**: 13-14, 1920.

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 Agricultural Experiments. Sugar-cane mosaic disease. *Jamaica Dept. Agric. Ann. Rpt.* **1923**: 12-14, 1924. (*Rev. Appl. Mycol.* **4**: 65, 1924.)

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 Field experiments in the control of mosaic disease of Jamaica. 1923-25, *Jamaica Dept. Agric. Microb. Circ.* **6**: 16-37, 1926.

**Murton, W. A.**

Environmental influences in the pathology of *Solanum tuberosum*. *Journ. Wash. Acad. Sci.* **3**(7): 1913.

**Musschenbroek, S. C. van**

Gele Strepenziekte (Yellow stripe disease.) *Circ. No.* **42**, der Soerbaijasche Vereeing van 16. *Oct. Bl.* **327**, 1892.

The first record of the mosaic disease of sugar cane.

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 Beschrijving van twee tot dusverre in West-Java onbekende sieziekten. (Description of two unknown diseases in West Java up to the present.) *Bijlage Arch. v.d. Java Suiker Indus. Overdruppen*, p. 113-118, 1893.

**Myers, J[ohn] G[olding]**

Dry-season studies of cane Homoptera at Soledad, Cuba. *Contribution Harvard Inst. Trop. Biol. & Med.* **3**: 69-110, 1926. (*Rev. Appl. Entom. ser. A.* **14**: 497-498, 1926.)

**Nakata, K., & Takimoto, S.**

(Diseases of cultivated plants in Korea.) Journ. Agric. Expt. Sta. Govt. Gen. Chosen **15**, 146 p., 1928.

**Narasimhan, M. J.**

Note on the occurrence of intracellular bodies in spike disease of sandal (*Santalum album* Linn.) Phytopathology **18**(9): 815-817, 1928.

The author reports the finding of intracellular bodies which supports the virus theory of Coleman.

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Cytological investigations on the spike disease of sandal *Santalum album*. Phytopathology **23**(2): 191-202, 1933.

The author describes the results of his cytological studies on spike disease of sandal. He gives special attention to the intracellular bodies observed, describes and compares them.

**Narasimhamurthy, N., & Sreenivasaya, N.**

Contribution of the study of spike disease of sandal (*Santalum album* Linn.) VI. Nitrogen metabolism in healthy and spiked leaves. Journ. Indian Inst. Sci. **12A**(10): 153-163, 1929.

**Neal, David C[arleton]**

Phony peaches: A disease occurring in Middle Georgia. Phytopathology **10**: 106-109, 1920.

A description of the disease.

-----, & **Wallance, J. M.**

Sweet potato mosaic. Mississippi State Plant Bd. Quart. Bull. **4**: 6-10, 1924.

-----, & **Barker, H[enry] D.**

Important tomato diseases of Mississippi. Mississippi State Plant Bd. Quart. Bull. **4**(1): 7-24, 1924.

**Needham, Charles W.**

The breaking of tulips. Garden (London) **89**: 599-600, 617-618, 1925.

Popular account of the disease.

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The breaking of tulips. Gard. Chron. **79**(3): 298-299, 1926.

Abstract of lecture before the Wakefield Paxton Society describing the disease.

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Breaking in tulips. Gard. Chron. **92**: 44-45, 1932.

**Neger, F[ranz] W[ilhelm]**

Die Blattrollkrankheit der Kartoffel. (Leaf roll disease of potato.) Deut. Landw. Presse 45(76):469-470, 1918.

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Die Blattrollkrankheit der Kartoffel. (Potato leaf-roll disease.) Ztschr. Pflanzenkrank. 29(1-4):27-48, 1919.

The author discusses the etiology of the disease and the physiology of the plant, also the translocation of starch in sound and diseased potatoes.

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Gesichtspunkte für die Bekämpfung der Blattrollkrankheit der Kartoffel. (View points in the fight against the leaf roll disease of potatoes.) Der Kartoffelbau 3(11); 1919.

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(Control of potato leaf-roll.) Sachs. Landw. Forstwischr. 63(27):271-272, 1920.

**Nelson, Ray**

Transference of the bean-mosaic virus by *Macrosiphum solanifolii*. Science n. s. 56:342-344, 1922.

Gives the results of studies which indicate that *M. solanifolii* is the carrier of the virus.

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The occurrence of protozoa in plants affected with mosaic and related diseases. Michigan Agric. Expt. Sta. Tech. Bull. 58, 30 p., 1923. (Phytopathology (Abstract) 13(1):41, 1923.)

A histological study which leads to the belief that the disease is due to a protozoan closely related to *Leptomonas*.

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Chrysanthemum yellows, a new disease in the greenhouse. Michigan Agric. Expt. Sta. Bull. 7(4):157-160, 1925.

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Cytological and biological investigations of bean mosaic. Journ. Bact. (Abstract) 19(1):22, 1930. (Rev. Appl. Mycol. 9(7):423, 1930. Phytopathology 20:133, 1930.)

The author reports the finding of bacteria in the chloroplasts, cytoplasm, phloem, xylem, and parenchyma tissues. The chloroplasts are destroyed and the bacteria found in the plastid detritus.

-----  
Infectious chlorosis of the rose. Phytopathology (Abstract) 20(1):130, 1930.

-----  
Correlative studies on the bacteriology of bean mosaic and seed transmission of the virus. Phytopathology (Abstract) 21(1):116, 1931.

-----  
 Investigations in the mosaic disease of bean (*Phaseolus vulgaris*)  
 Michigan Agric. Expt. Sta. Tech. Bull. **118**; 71 p., 1932.

The disease reported from Russia by Iwanowski in 1899, from United States by Clinton in 1908, attacks all commercial varieties and *P. vulgaris* var. *humilis*, *P. acutifolium* var. *latifolius*, *P. angularis*, *P. coccinelus*, *Vicia faba* and *Vigna sesquipedalis*. It is transmitted by *Macrosiphum solanifolii* (*M. gei*) and the leaf hopper, *Empoasca fabae*.

-----, & Down, E. E.

Influence of pollen and ovule infection in seed transmission of bean mosaic. Phytopathology (Abstract) **23**(1): 25, 1933.

**Neuwirth, F[rantisek]**

Die Kräuselkrankheit der Zuckerrübe. (The curling disease of sugar beet.) Rudschau, Zeitschr. f. Zuckerind. Prag. **4**, 14 p., 1926.

**Newcombe, Frederick C[harles,] & Lee, H[enry] Atherton**

The cause of sectional chlorosis of sugar cane. Hawaii Planters' Rec. **31**: 125-128, 1927.

**Newhall, Allan G[oodrich]**

Seed transmission of lettuce mosaic. Phytopathology **13**(2): 104-106, 1923.

This paper gives evidence that this disease is carried in the seeds.

**Newman, C[harles] C[arter,] & Leonion, M. S.**

Irish potato breeding. South Carolina Agric. Expt. Sta. Bull. **195**, 28 p., 1918.

**Newton, W[illiam]**

Infectious chlorosis of roses. Canada Dept. Agric. Div. Bot. Rpt. Dom. Botanist for the year 1930, p. 23, 1931.

A record of the presence of this disease.

**Nishimura, Makato**

A carrier of the mosaic disease. Bull. Torrey Bot. Club **45**: 219-231, 1918.

The results of a series of inoculations experiments demonstrating that *Physalis alkekengi* is a symptomless carrier of a mosaic disease.

**Noble R[obert] J[ackson]**

Some observations on the woodiness or bullet disease of passion fruit. Journ. Proc. Roy. Soc. New South Wales **62**: 78-79, 1928.

Spotted wilt in tomatoes. *Agric. Gaz. New South Wales* **39** (1): 59-63, 1928.

Brief popular description of the comparatively new virus disease.

Woodiness of Passion fruit. Cause of the disease discovered. *Agr. Gaz. N. S. Wales* **39**(9): 681-683, 1928.

Account of this disease in New South Wales. Description and nature of the disease. The author states that it is due to the action of a virus and is of infectious character. Gives control measures.

Biologist—New South Wales Dept. Agric. Ann. Rpt. **1927-28**: 16, 1929. (*Rev. Appl. Mycol.* **9**(1): 18, 1930.)

Australia: success in control of bunchy-top disease of banana in New South Wales. *Internat. Bull. Plant Protect.* **7**(9): 195, 1933.

Brief notes on production, damages and control in regard to bunchy top of bananas in Australia.

**Nolla, J[osé] A[ntonio] B[ernabé]**

Las enfermedades del tabaco en Puerto Rico. (Tobacco diseases in Puerto Rico.) *Ins. Expt. Sta. Puerto Rico Bull.* **39**, p. 24-25, 1932.

Brief notes on tobacco mosaic. The author states that the disease affects the quality more than the yield. Gives nature and cause, of the disease, symptoms and treatment.

**, & Roque, Arturo**

A variety of tobacco resistant to ordinary tobacco mosaic. *Journ. Dept. Agric. Puerto Rico* **17**(4): 301-303, 1933.

A preliminary report. The variety was introduced from Colombia, Valle del Cauca, in 1929, by the senior author.

**Noordanus, G.**

Mosaiekielzichte der frambozen. (Mosaic disease of raspberry.) *Floralia* **47**(30): 472-473, 1926.

A brief note given on the occurrence of mosaic on raspberries in Holland. Gives degree of susceptibility of different varieties.

**Norris, Roland V[ictor]**

Spike disease of sandalwood. *Nature* **126**(3174): 311, 1930.

A review of recent progress in the study of this disease. The susceptibility of the sandal tree may be influenced by the host in which it grows.

**North, D[avid] S[utherland]**

The control of sugar-cane diseases. Australian Sugar Journ. 14(12): 687-693, 15(1): 9-24, 73-83. (Int. Sugar Journ. 26(310): 522-528, 1924. Rev. Appl. Mycol. 2: 578-581, 1923.)

This is a popular paper containing some data on virus disease.

**Norton, J[ohn] B[itting] S[mith]**

Irish potato disease. Maryland Agric. Expt. Sta. Bull. 108: 63-72, 1905.

Report of the State Pathologist for 1910. Maryland State Hort. Soc. 13: 138-154, 1910.

Loss from mosaic disease of tomato. Phytopathology (Abstract) 4(6): 398, 1914.

Peach yellows and peach rosette. California Comm. Hort. Mon. Bull. 6(7): 282-286, 1918.

Mosaic diseases and their control. Maryland Agric. Soc. & Maryland Farm Br. 8: 374-378, 1924.

....., & **Heuberger, J. W.**

Factors influencing type and sequence of tomato mosaic leaf abnormalities. Phytopathology (Abstract) 23(1): 26, 1933.

**Novinenko, A. I.**

(Insects as carriers of mosaic disease of sugar beet. Preliminary note.) Prot. Plants Ukraine 3-4: 164-168, 1928.

(Insect vectors of sugar-beet mosaic.) Cent. Zuckerindus. 38: 400-401, 1930. (Facts About Sugar 25(19): 467, 1930.)

Insects as carriers of mosaic disease of sugar beet. Pub. Plant Breed. Dept. Sugar Union. Kiev. 3: III, 1930. (Stanz. Ent. Otd. 13, 15 p., 1930.)

(The insects as transmitters of mosaic disease of the sugar beet.) In V. P. Muraviov, Mozaichnye Bolezni Sakharnoi Svekly (Mosaic diseases of sugar beet.) Kiev, S.S.U. Souz-sakhara p. 99-111, 1930. (English Abstract p. 111.)

Transmission experiments showed that the *Aphis fabae* gave a high percentage of infection as carrier of the disease. The bug *Pocilloscytus cognatus* proved to be less active. As the transmission



does not occur at a distance greater than 700 m. the author recommends the planting of sugar beet isolated at that distance from infested fields and susceptible weeds and to keep the plantation free of insects capable of transmitting sugar-beet mosaic.

**Nowell, W[illiam]**

Sugar-cane diseases in Puerto Rico. Agric. News (Barbados) **16**(393) :158, 1917.

A comment to the Fifth Annual Report (1916) of the Insular Experiment Station of Puerto Rico, written by John A. Stevenson.

Mosaic disease of sugar cane. Agric. News (Barbados) **19**(462) : 14, 1920.

A review of the United States Department of Agriculture Bulletin No. 829 by Brandes and Bulletin No. 19 of the Insular Experiment Station of Puerto Rico by F. S. Earle.

Eradication of mosaic disease in Trinidad. Trinidad and Tobago Dept. Agric. Bull. **19**:105-106, 1921.

Diseases of crop plants in the Lesser Antilles, p. 325, 1923.

This book contains much data on virus diseases.

**Oberstein, [Otto]**

Die Kräuselkrankheit der Zukerrübe in America und die neueren Theorien der Blattrollkrankheit der Kartoffel. (The curly-leaf disease of sugar beet in America and the new theories of the leaf-roll disease of potatoes.) Nachrichtenbl. Deutsch. Pfl. Schutzd. **3**: 35, 1923.

**Ocfemia, G[eraldo] O[ffimaria]**

Progress report on bunchy-top of abacá or Manila hemp. Phytopathology **16**(11) : 894, 1926.

This disease is caused by a virus and is carried by an Aphid, *Pentalonia nigronervosa*.

Second progress report on bunchy-top of abacá or Manila hemp. Phytopathology **17**(4) : 255-257, 1927.

The heart rot of this plant is sometimes the last stage of bunchy-top. Bunchy-top, due to other causes, is different from bunchy-top caused by the virus.

Bunchy-top of abacá or Manila hemp I. A study of the cause of this disease and its methods of transmission. Amer. Journ. Bot. **17**(1) : 1-18, 1930.

This paper is a very thorough discussion of the symptoms, effects and transmission of this disease.

-----  
Save the abacá industry from ruin by bunchy-top: The Philippine Agric. **20**(3):167-169, 1931.

The author gives a warning to the country about the danger of the disease, also gives advise as to the means of overcoming the destructive disease in the producing provinces. States that the disease is of the virus type and transmitted by insects and is dangerous to abacá as well as to bananas.

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The bunchy-top of abacá and its control. Phil. Agric. **20**(5): 328-340, 1931.

A continuation of the author's work for the control of bunchy-top of *Musa textiles*.

-----  
Notes on some economic-plant diseases, new in the Philippine Islands. Philippine Agric. **19**(9): 581-589, 1931.

A disease of corn which resembles Fiji diseases of sugar cane is described.

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(A note) Philippine Agric. **21**(5):358, 1932. (Sugar News **13**(7): 751, 1932.)

In this brief note it is announced that Dr. Ocfemia of the Philippine College of Agriculture found the transmissibility of the Fiji disease of sugar cane by adults of the leafhopper *Perkinsiella vastatrix* Bredin. (Later in Amer. Journ. Bot. **21**(3): 113, 1934, (4th foot note) the author claims that this is the first mention in print of the subject.)

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An interesting reaction of a sugar-cane variety to grass mosaic. Philippine Agric. **21**(6): 414-419, 1932.

-----, **Hurtado, Evaristo A., & Hernández, Crispiniano C.**  
Distribution of mosaic and Fiji disease in sugar-cane stalks; effects of these maladies on the germination of the eyes and transmission of the viruses by pin pricks. Philip. Agric. **22**(6): 385-407, 1933.

The authors state that mosaic and Fiji diseases are two of the major diseases of sugar cane in the Philippines causing enormous losses to the sugar industry. They describe both diseases. Mosaic is transmitted by *Aphis maidis* Fitch. Fiji disease by *Perkinsiella vastatrix* Bredin in the Philippines, while in Australia it is transmitted by *P. saccharicida* Kirk. They give extensive data of experiments in artificial transmission and germination.

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An insect vector of the Fiji disease of sugar cane. Amer. Journ. Bot. **21**(3): 113-120, 1934.

The author reports the results of his experiments under carefully

controlled conditions. He found that the adults of the leafhopper *Perkinsiella vastatrix* Breddin transmitted Fiji disease of sugar cane. The incubation period varied from 8 to 28 days. He describes the symptoms of the disease resulting from the transmission by the leafhopper under observation.

**Oehmichen, C., & Hallier, E.**

Die Kräuselkrankheit der Kartoffel: I Form und Verbreitung der Krankheit. II. Ursache der Krankheit. (The curl disease of potatoes. I Form and spreading of the disease. II Cause of the disease.) Landw. Presse 2:464, 1875.

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 Beobachtungen über des Auftreten der Kräuselkrankheit der Kartoffeln 1873-1875. (Observations on the behavior of the curl disease of the potatoes 1873-1875.) Zeitschr. Parasitenk 4:144-152, 1875.

**Ogilvie, L[awrence]**

Notes on leaf-roll of potatoes. Agric. Bull. Bermuda Dept. Agric. 3(12):1, 1924-25, 1925.

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 The raising of hyacinths in Holland. Journ. Ministry of Agric. 33:248, 1926.

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 An important virus disease of *Lilium longiflorum* and its varieties. Nature (London) 119(2997):528, 1927.

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 Aster yellows in Bermuda. A disease of many cultivated plants. Bermuda Agric. Bull. 6(5):7-8, 1927.

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 Virus diseases of plants in Bermuda. Bermuda Agric. Bull. 7:4-7, 1928.

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 A transmissible virus disease of the eastern lily. Ann. Appl. Biol. 15(4):540-562, 1928.

The author gives a review of the history of the disease. The disease is carried by *Aphis gossypii*. It attacks *L. formosum* and *L. giganteum*.

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 Report of the plant pathologist for the year 1927. Bermuda Dept. Agric. Ann. Rpt. 1927:26-37, 1928.

Notes on mosaic disease of banana, Hippeastrum and lettuce.

-----, & **Guterman, Carl E[dward] F[rederick]**

A mosaic disease of eastern lily. *Phytopathology* **19**(3):311-316, 1929.

There are three types of symptoms of this disease. The symptoms are partly masked by temperature above 70° F. All attempts to transmit by insect or mechanical devices have failed.

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Ring spot or spotted wilt of tomatoes and ornamental plants. *Agric. & Hort. Res. Stat. Long Ashton, Ann. Rpt.* **1932**:121-122, 1933.

Brief notes reporting the occurrence of ringspot or spotted wilt disease on tomatoes, *Streptosolen jamesonii*, *Schizanthus* sp., *Browallia speciosa major*, *Trachelium* sp., begonias, *Campanula pyramidalis* and dahlias.

**Oldaker, G. E. W., & Dowson, W[alter] J[ohn]**

Potatoes. Virus diseases and clean seed. *Tasmanian Journal Agric.* **1**(1):14-18, 1929. (*Rev. Appl. Mycol.* **9**:332, 1930.)

Includes descriptions and recommendations of control by growing seed at high altitudes.

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Potatoes. Elimination of virus and other diseases. Care of "seed" from the selected plants. *Tasmania Journ. Agric. n. s.* **1**:87-91, 1930.

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Potatoes, virus diseases and seed selection. *Tasmanian Journ. Agric. n. s.* **2**(2):91-92, 1931.

**Olitsky, Peter K[osciusko]**

Experiments on the cultivation of the active agent of mosaic disease of tobacco and tomato. *Science n. s.* **60**(1565):593-594, 1924. (*Journ. Expt. Med.* **41**(1):129-136, 1925.)

The author gives an account of work from which he concludes that he has been successful in growing the organism in culture.

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The inoculation of tomato and tobacco plants with potato mosaic virus. *Science n. s.* **61**(1586):544-545, 1925.

The authors record the transmission of potato mosaic to tobacco and tomato.

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The transfer of tobacco and tomato mosaic disease by the *Pseudococcus citri*. *Science n. s.* **62**(1611):442, 1925.

A brief paper giving evidences that this insect transmits the disease.

-----, & Hoffman, D[onald] G.

The electric charge of mosaic virus particles. Proc. Soc. Exper. Biol. & Med. **27**(5): 378-379, 1930.

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Concerning an increase in the potency of mosaic *in vitro*. Science n. s. **74**(1924): 483-484, 1931.

The authors conclude that—"in view of the outcome of the experiments, we have concluded that the results of our tests cannot with certainty be referred to a true multiplication of mosaic virus."

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The inactivation of mosaic-disease virus by pulverizing infected tissue. Science n. s. **75**(1950): 518-519, 1932.

The authors describe methods and give results of studies by which they conclude that "tomato-mosaic virus loses its infectivity when tissues containing it are comminuted by the methods described."

**Oliver y Lugo, Fernando**

El mosaico del tabaco y cómo combatirlo. (Tobacco mosaic and how to control it.) Rev. Agric. Puerto Rico **10**(1): 11-14, 1923.

The author believes that the disease persists in the soil and recommends a three-year crop rotation.

**Oortwijn, Botjes, J. G.**

Iets over het kweken van Ziektevoy pootgoed by aardappelen. Bull. of Directie van den Landbouw te s-Gravenhage, 1919.

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Raising phloem-necrosis and mosaic free potatoes, and a source of infection whose nature has not yet been elucidated. Phytopathology **10**(1): 48-49, 1920.

Gives recommendations for planting to obtain disease-free seed.

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Die Blattrollkrankheit der Kartoffelpflanze. (Potato leaf-roll.)

Inang. Diss: Landw. Hochsch. Wageningen, 1920, p. 16, 1920.

A very thorough discussion of symptoms.

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De bladrolziekte van der Aardappelplant. (Potato leaf-roll disease.) **8**, 136 p., Wageningen, 1920.

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Het gebruik van ourijpe aadappelknollen als pootgoed. (The use of unripe potato tuber for seed.) Culture **34**: 173-185, 1922. **35**: 279-288, 1923.

Tubers that are harvested early will produce fewer diseased plants than tubers that are harvested late. This is because of a greater number of insect vectors in the late than in the early season.

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The potato selection farm at Oostwold, Rpt. Int. Conf. Phytopath. & Econ. Ent. Holland p. 142-147, 1923. H. Veenman & Sons, Wageningen.

The methods and results of seed selection.

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Onbekende fetoren bij het kweken van Ziektevrij pootgoed. (Unknown vectors in the propagation of disease-free seed.) Tijdschr. over Plantenziekten **29**(7) : 113-126, 1923.

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Het vroeg rooien van voor pootgoed bestemde aardappelen. (Early digging of seed potatoes.) Tijdschr. Plantenz **29** : 132-133, 1923.

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Die Verwendung unreifer kartoffeln als Saatgut. (Blattroll und Mosaikkrankheit.) Deutsche Landw. Presse **51** : 104, 1924.

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Het optreden van bladrol-en mosaiekziekten in den nabouw van gezonde Aardappelplanten, die op grooten afstand groeien van zieke plants. (The occurrence of leaf-roll and mosaic disease in the progeny of healthy potato plans grown at great distance from infested plants.) Tijdschr. Plantenz **31**(1) : 1-6, 1925.

The disease was transmitted from diseased to healthy plants over 1,200 meters.

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Iets omtrent de beteekenis van enkele aardappelziekten en vooral van het licht mosaiek bij verschillende rassen. Landbouwkundg. Tijdschr. **40**(483) : 687-692, 1928.

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Kartoffelkrankheiten und abbau. Mitt. der D. L. G. **44** : 870-872, 1929.

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Top-necrosis in the potato. Phytopathology (Abstract) **20**(1) : 138-139, 1930.

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Empfänglichkeit von Kartoffelsorten gegen Viruskrankheiten. (Susceptibility of potato varieties to virus diseases.) Landbouwkundige Tijdschr. **509**(42) : 517-529, 1930. (Fortschr. der Landw. **6**(5) : 173, 1931.)

The author failed to reveal complete immunity in any variety of potato. Different varieties contracted different virus diseases.

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 Verzwakking van het virus der topnecrose, en verworven immuniteit van Aardappelrassen ten opzichte van dit virus. (Attenuation of the virus of top necrosis and acquired immunity of potato varieties in respect of this virus.) Tijdschr. over Plantenziekten **39**(10):249-262, 1933.

Report of results obtained by grafting tuber cores on apparently healthy potato varieties.

**Orian, G.**

Les maladies de la canne á Maurice. (Sugar-cane disease in Mauritius.) Rev. Agric. de L'Ile Maurice **1929**:206-210, 1929. (Rev. Appl. Mycol. **9**:340, 1930.)

This paper contains a brief reference to the streak disease.

**Orton, C[layton] R[oberts], & Mc Kinney Jr., W[illiam] H.**

Winter blight of the tomato. Pennsylvania Agric. Expt. Sta. Ann. Rpt. **1915**:235-246, 1915.

A report of studies on the disease; at that time the disease was not known to be due to a virus.

**Orton, W[illiam] A[llen]**

Environmental influence in the pathology of *Solanum tuberosum*. Journ. Wash. Acad. Science. **3**:180-190, 1913.

A brief discussion of some of the virus diseases of potatoes.

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 Potato leaf-roll. U. S. D. A. Br. Plant. Indus. Circ. **109**:7-10, 1913.

Description and control measures.

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 Leaf-roll, curly-leaf and other potato diseases. Phytopathology (Abstract) **3**(1):69, 1913.

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 Potato wilt, leaf-roll and related diseases. U. S. D. A. Bull. **64**:48 p., 1914.

History, description, character, geographical distribution, theories as to cause, methods of control. Also a brief discussion of curly-dwarf.

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 Inspection and certification of potato seed stock. Phytopathology (Abstract) **4**(1):39-40. 1914.

-----, & **Rand, Frederick V[ernon]**

Pecan rosette. Journ. Agric. Res. **3**:149-174, 1914.

History, distribution, symptoms and experiments. Believe it to be a non-infectious chlorotic disease.

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Streak disease of potato. *Phytopathology* 10(2):97-100, 1920.

The author gives a description of the disease and discussion of varietal resistance.

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New work in potatoes diseases in America. *Roy. Hort. Soc. Int. Potato Conf. Rpt.* 1921:169-179, 1921.

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An early report on infectious chlorosis. *Phytopathology* 14:189-199, 1924.

The writer quotes an early record of 1715.

**Osborn, H. T.**

Incubation period of pea mosaic in *Macrosiphum pisi*. *Phytopathology* (Abstract) 24(1):15, 1934.

**Osterspey,**

Kin Versuch über Einfluss der Düngung auf der Blattrollkrankheit und den Ertrag der Kartoffeln. (An experiment on the influence of manure on the leaf roll disease and on the yield of potatoes.) *Mitt. D. Landw. Ges.* 26:222-224, 1911.

**Otero Braquertt, J[osé]**

Unas palabras sobre la enfermedad de la caña "El matizado" o "Rayas amarillas". (A few words about the sugar-cane disease mottling or "yellow stripe".) *Rev. Agric. Com. & Trabajo, Cuba*, 7(4):46-54, 1924.

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Sobre la enfermedad de la caña "El mosaico" o "Rayas amarillas". (About "mosaic" or "yellowstripe" disease of sugar cane.) *Rev. Agric. Com. y Trab. Cuba*, 7(4):54-56, 1924.

**Page, R. L.**

The future of Uba cane in Puerto Rico. *Memoirs Ass'n Sugar-Cane Tech., Puerto Rico*. 1(1):25-27, 1922. (Facts About Sugar.) 15:420-421, 1922.

A brief reference to varietal resistance and susceptibility.

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La enfermedad del matizado; su extirpación y control. (The mottling disease; its eradication and control.) *Rev. Agric. Puerto Rico*. 11(1):19-22, 1923. (*Australian Sugar Journ.*) 15(7):428-429, 1923. *Facts About Sugar* 17(1):14-15, 1923.)

Fields have been practically freed from mosaic by roguing.



**Pagliano, T[héophile] C[arles] L[ouis]**

Quelques maladies de cotonnier. (Some diseases of cotton.)  
Rev. Hort. Tunisie **23**: 225-227, 1925.

-----, & **Bewley, W. F.**

Stripe disease of tomatoes. Journ. Min. Agric. **26**(10): 998-1000, 1920.

**Palm, B[jörn] T[orvald]**

De mosaieckziekte van de tabak een Chlamydozoonose? (Is the mosaic disease of tobacco a Chlamydozoonose?) Medan Sumatra. Deli Proefstat. Bull. **15**: 7-20, 1922.

A study which leads to the describing of what the author believes to be a chlamydozoon under the name of *Strongyloplasma Iwanowskii*.

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Bestrijding van plagen en ziekten in the tabakscultuur. Verslag van een sturdiereis in Europe en de Vereenigde Staten. (Combating pests and diseases in tobacco. Report of a study trip in Europe and United States.) Medan Sumatra. Deli Proefstat. Ann. Rpt. **1922-23**: 53-54, 1923.

**Pantanelli, En[rico]**

Sui caratteri dell'arriciamento e del mosaico della vite. Sepans. Malpighia, an XXV. 56. Catania 1912.

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Sulla causa del mosaico della piante. (The cause of mosaic disease of plants.) Boll. Meno. R. Staz. Patl. Veg. (Rome) **1**(3-4): 41-41, 1920.

The author reports that the mosaic of *Hypochoeris radicata* is caused by *Macrosiphora tussilaginis*.

**Pape, H[einrich]**

Das verheerende Auftreten der Krauselkrankheiten bei Pelargonien. Die Gartenwelt **31**(22): 329-331, 1927.

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Eine neue Krankreit des poinsettie. (A new disease of poinsettia.) Gartenwelt **31**: 772-773, 1927.

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Mosaikkrankheit bei Rhododendron. Gartenwelt **35**(45): 621, 1931.

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Zur Kräuselkrankheit der Poinsettie. (The curl disease of Poinsettia.) Gartenwelt **35**(52): 716, 1931.

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Mosaikkrankheit an Glieder-, Blatt-und Rutenkakteen. (Mosaic disease of joint-leaf-and twig Cactaceae.) Gartenwelt **36**: 707-708, 731-732, 1932. (Zentralb. für Bakt (Abstract) Ab. 2, **88**(13-16): 349, 1933.)

Description of a mosaic disease of cactus occurring in Germany. Gives methods of control and the following list of species affected: *Epiphyllum truncatum* (Deutsche Kaiserin), *E. harrisonii*, *E. hybridum rubrum*, Meteor, President Grevy, *E. rosa amabilis*, *E. salmoneum*, Vesuvius, *E. violaceum superbum*, *E. bridgesii*, *Phyllocactus gaertneri* var *mackoyanus* and *Rhipsalis rosea*.

**Paravicini, Eugen**

Die Kartoffelkrankheiten in Niederlanddisch "Ost" Indian. (Potato diseases in the Dutch East Indies.) Cent. für Bakt. **58**: 212-220, 1923.

**Parisot**

Recherches sur la filosité de la Pomme de terre. (Researches about the "filosité" of the potato.) Ann. Ecole Not. Agr. Rennes **4**, 1910.

**Park, M[alcolm]**

Report of the Mycological Division. Ceylon Dept. Agric. Tech. Rpts. **1928**: 1-6, 1929. (Rev. Appl. Mycol. **9**(2): 88, 1930.)  
This paper contains a record of mosaic on eggplant and okra.

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Matters of phytopathological interest during 1929. Trop. Agric. (Ceylon) **74**(4): 195-199, 1930.  
Banana bunchy top is reported.

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Some diseases of plantains in Ceylon. Trop. Agric. Ceylon, **75**(6): 347-353, 1930.  
The etiology of bunchy top disease is given. It has been known in Ceylon since 1913. Today it is widespread.

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The oil treatment of plantain diseases. Trop. Agric. (Ceylon) **81**(2): 86-90, 1933.  
Report of treatment of gas oil 0.864 specific gravity for bunchy top in banana.

**Parker, E. R., & Horne, Wm. F.**

The transmission of avocado sun-blotch. California Avocado Assoc. Yearbook **1932**: 50-56, 1932.  
This paper gives the results of grafting and budding experiments which demonstrate that the disease is carried in stock and in scions.

**Pascalet, M.**

La mosaïque ou lepre du Manioc. (The mosaic or leprosy of manioc.) Agron. Colon. **21**(172):117-131, 1932.

**Passy, P.**

Une nouvelle maladie du poirier. (A new disease of the pear tree.) Rev. Hort. **35**:252-253, 1913. (Intern. Agrar. Techn. Hundschan **4**:1152, 1913.)

It refers to pear msoaic.

**Patch, Edith M[arion]**

Rose bushes in relation to potato culture. Maine Agric. Expt. Sta. Bull. **303**:321-344, 1921.

Gives evidence that *Macrosiphum solanifolii* overwinters in rose bushes.

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The buckthorn aphid. Maine Agric. Expt. Sta. Bull. **317**:29-52, 1924.

*Aphis abbreviata* passes the winter on *Rhamnus*. A list of its food plants is given.

**Peacock, W[alter] M[iller]**

The elimination of virus diseases. Ann. Pat. Journ. **4**:127-129, 1927.

**Peltier, Geo[rge] L(eo)**

The "false blossom" of the cranberry. Unpub. Thesis Wisconsin Univ. Library, 24 p., 1910.

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Experiments on stem rot at Illinois University. Amer. Florist **40**(1292):324-327, 1913. (Flor. Ex. **35**(11):575-577, 1913. Flor. Rev. **3**:(797):24-26, 1913.)

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Diseases of carnation. Flor. Ex. **37**(5):252-553, (6):320, (7):372-373, 1914.

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Report of the Illinois Pathologist. Amer. Flor. **41**(1346), 432-434, 1914.

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Work at Illinois Florist Experiment Station.—Carnation Diseases. Flor. Rev. **33**(851):22, 52, 56, 1914.

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Carnation disease: In J. H. Dick Commercial carnation culture, New York, p. 237-252, 1915.

A brief account on carnation yellows before the cause of the disease was known.

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Illinois Pathologist report. Amer. Flor. **44**(1398):439-440,  
1915.

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Stem rot of carnation. Flor. Ex. **39**(10):539, 1915.

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Carnation diseases. Flor. Rev. **35**(901):14, 1915. (Horticulture 21:373, 1915.)

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Pathologist report. Flor. Ex. **41**(11):608, 1916.

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Carnation diseases. Flor. Rev. **37**(954):20, 1916.

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Carnation yellows. Amer. Flor. **46**(1443):60-61, 1916. (Flor. Rev. **37**(948):23-24, 1916.)

Report of observations made by the author; he recognizes that there are several forms of the disease, which he describes briefly. It was transmitted by grafting but not by the seed.

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Control of carnation yellows. Amer. Flor. **46**(1455):725-726,  
1916.

Popular.

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Carnation yellows. Proc. Amer. Carn. Soc. **25**:29-35, 1916.

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Control equipment for the study of the relation of environment to diseases. Nebraska Agric. Expt. Sta. Res. Bull. **28**, 16 p. 1924.

#### **Pemberton, C. E.**

Entomology. Report Comm. Expt. Sta. H.S.P.A. **1923-24**:13-32, 1924.

Reports that *Aphis maidis* produces severe symptoms of mosaic on *Syntherisma* sp.

#### **Penhallow, D[avid] P[earce]**

Peach yellows. Houghton Farm. Expt. Sta. ser. III **2**:25-45, 1882.

Gives the results of chemical and microscopical studies of the peach wood, etc. Also discusses external characters, soil and atmospheric influences.

#### **Perreau.**

Note sur la Nielle des tabacs. (Notes on the mosaic disease of tobacco.) Bull. Soc. Bot. France **56**(1):53-54, 1910.

**Perret, C[laude]**

Les formes de dégénérescence de la Pomme de terre. (Forms of degeneration of the potato.) Notes & Act. R. Sci. No. **632**, Oct. 23, 1920.

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Sur les maladies des pommes de terre. (About diseases of the potato.) Ann. Epiphyties **7**: 304-314, 1921.

This paper gives the results of experimental work with fertilizers and at various altitudes.

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(The contest against degeneration.) Vie Agric. & Rurale **19**: 180-185, 1921.

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La dégénérescence de la Pomme de terre. (Degeneration of the potato.) Bull. Soc. Path. **9**(1): 39-42, 1922.

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(Potato leaf roll (Loire). Assoc. France Avanc. Sci. Conf. Compt. Rend. **46**: 884-889, 1922.

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Fletrissement des pieds et filosité de la pomme de terre. (Foot-wilt and "filosité" of the potato.) Rev. Path. Vég. & Ent. Agric. **10**: 168-171, 1923.

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Recherches sur la dégénérescence de la pomme de terre. (Research on potato degeneration.) Ann. Epiphyt. **9**: 61-69, 1923.

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La dégénérescence des pomme de terre. (The degeneration of the potato.) La Vie Agric. **23**(30): 61-66, 1923.

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Les maladies de la pomme de terre en 1924. (Potato diseases in 1924.) Rev. Vég. et Ent. Agric., **11**(4): 309-316, 1924.

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Apropos de la filosité de la pomme de terre. ("Filosité" of the Potato.) (Rev. Path. Vég. Ent. Agric. **13**(24): 319-322, 1926.

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La station de sélection des Pommes de terre de la Loire. (The potato selection station of the Loire.) Bull. Off. Agric. Massiff. Central **10**: 83-93, 1929.

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**Pestana, Antonio Carlos**

La caña Uba y la enfermedad del mosaico. (Uba cane and the mosaic disease.) El Mundo Azucarero **12**(11): 328-329, 1925.

(Translated from Journal de Lavoura, Brazil.) (Louisiana Planter 74(15):291, 1925.)

**Peters, L[eo]**

Krankheiten und Beschädigungen des Tabaks. (Diseases and injuries of tobacco.) Mitteil. Kais. Biol. Aust. Land. Fortstraw. 13:58-64, 1912.

Describes disease, discusses work of others and gives recommendations for control.

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Krankheiten des Tabaks. (Tobacco diseases.) Ber. über die Tätigkeit der Biol. Reichsanst. 1919:62, 1920.

**Peterson, P[aul] D[onald]**

Plastids pigment and chlorophyllase contents of tobacco plants as influenced by three types of mosaic. Phytopathology (Abstract) 21(1):119, 1931.

**Pethybridge, G[eorge] H[erbert]**

Potato diseases in Ireland. Ireland Dept. Agric. & Tech. Instruction Journ. 10(2):241-256, 1910.

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Leaf roll and "curl". Ireland Dept. Agric. & Tech. Instruction Journ. 11(3):447-499, 1911.

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"Curl and "leaf roll". Ireland Dept. Agric. & Tech. Instruction Journ. 12(2):354-356, 1912.

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Investigations on potato diseases (Fourth Report). Ireland Dept. Agric. & Tech. Instruction Journ. 13(3):445-468, 1913.

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Investigations on potato diseases IX-X. Ireland Dept. Agric. & Tech. Instruction Journ. 18(4):410-416, 1918. 19(3):271-272, 1919.

A discussion of the 1918 Ireland crop with special reference to some diseases including leaf roll. It was treated by heating the tuber as a means of prevention. It is claimed that heat did not produce leaf roll.

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Potato leaf-roll. Journ. Min. Agric. 31(9):863-869, 1924.

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A suspected virus disease of zonal Pelargoniums. Gard. Chro. 92(2395):378-379, 1932.

**Petri, L[ionello]**

Recerche sulle cause dei deperimenti delle vite in Sicilia. I—Contributo allo studio dell'azione degli abbassamenti di temperatura sulle vite in repporto all' arricciamento. (Researches on the cause of the decline of the vine in Sicily. I—Contribution to the study of the vine in relation to the curling.) Mém. R. Statioze Patologia Veg., Roma 212 p., 1912.

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Nuave vedute sulle cause dell' arricciamento della vite. (New views about the cause of the curling of the vine.) R. Acad. Linei 27: 271–275, 1918.

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L' arricciamento della vite é una malattia prodotta da protozoi? (Is leaf roll of the vine a disease produced by protozoa? Rendic. Acad. Lincei ser. 8, 32(5): 395–397, 1923.

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Stato attuale di alcuni problemi di fitopatologia. (Present status of certain problems of phytopathology.) Conferenza tenuta in Roma al XVIII Congresso delle Caltedre Ambulanti di Agricoltura Italiane il 10 Maggio 1924, 16 p., 1924.

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Sulle cause dell' arricciamento della vite. (On the cause of leaf roll of the vine.) Boll. R. Staz. Pat. Veg. n. s. 9(2): 101–130, 1929 (Rev. Appl. Mycol. 9(2): 83–85, 1930.)

The author gives proof that "arriciamento" (Coutnone, roncet, Krantem and Reisigkrankheit) of the grape vines is caused by a virus.

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Sur une méthode pour effectuer les injections de virus dans les feuilles. (About a method to practice virus injection into the leaves.) Second Intern., Cong. Compt. Path. Paris Compt. Rend. Communications 2: 439–441, 1931.

Method and device is described for injecting mosaic virus into citrus leaves.

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Sull "arriciamento" della vite. (The curling of the vine.) Boll. R. Staz. Patol. Veget., (Rome) n. s. 11(1): 61–83, 1931.

Bodies analogous to x-bodies were seen near the nuclei in root-tip cells. The disease is infectious and is believed to be virus. The filterable virus phase diffuse and produce the degeneration stage in the root tip.

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Maculatura interna ereditaria dei tuberi di patata. (Hereditary internal spotting of potato tubers.) Boll. R. Staz. Patol. Veg. **11**(2) : 171-175, 1931.

An internal necrosis which is transmitted by the tuber.

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Variegatura infettiva delle foglie di "Citrus vulgaris". (Infectious variegation of the leaves of "Citrus vulgaris".) Risso Bull. R. Staz. Pat. Veg. **11**(2) : 105-114, 1931.

**Phillips, J[ohn] L[loyd]**

Yellows and some other important diseases of the peach. Virginia State Crop & Pest Comm. Circ. n.s. No. 4. 1908.

A popular discussion of peach yellows, peach rosette and little peach.

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Peach yellows as it affects nurserymen. Address before American Nurserymen's Association. Milwaukee Wis., June 12, 1908.

A popular discussion giving some losses.

**Pieper, [Walter]**

Die ursachen und wirkungen des Kartoffelabbauer. (The causes and effects of potato degeneration.) Illus. Landw. Zeit. **50** (1) : 134-135, 1930. (Rev. Appl. Mycol. **9** : 602, 1930.)

This paper discusses the influence of environment on mosaic and leaf-roll.

**Pierce, W[alter] H[oward], & Hugenford, C[harles] W[illiam]**

Symptomatology transmission, infection and control of bean mosaic in Idaho. Idaho Agric. Expt. Sta. Res. Bull. **7**, 37 p. 1929.

The authors give a discussion of the symptoms, the losses and inoculation experiments. Resistant varieties offer the best method of control.

-----, & -----  
A note on the longevity of the bean mosaic virus. Phytopathology **19**(6) : 605-606, 1929.

The disease was carried in seed 32 years old.

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Viruses of the bean. Phytopathology **24**(2) : 87-115, 1934.

Thorough study on variety resistance of bean (*Phaseolus vulgaris*) to virus of common-bean mosaic. The author classifies the viruses and gives the susceptibility of each variety in tabulated form. Gives also data on insect vectors.



**Pinazzoli, F[rancesca]**

Male della bolla e del mosaico. Boll. Tecn. della coltivazione dei tab. R. Inst. Sperim. Scafati (Salerno) **3**(4):1-14, 1904.

**Pinkhof, Marianne**

Untersuchungen über die umfallkrankheit der tulpen. (Investigations on the falling disease of tulips.) Recueil Trav. Bot. Néerlandais **26**:135-288, 1929. (Rev. Appl. Mycol. **9**:528, 1929.)

**Pitt, W.**

On discovering the cause and pointing out the cure for the curl in potatoes. Trans. Soc. Encouragement of Arts, Manuf. & Comm. **8**:31-34, 1790.

Historical value only.

Discussing curl or degeneration of potatoes. Trans. Soc. Encouragement of Arts, Manuf. & Comm. **8**: 1790.

Historical value only.

**Pittman, H[arold] A[mbrose Jacques]**

Spotted wilt of tomatoes. Journ. Council Sci. & Indus. Res. (Australia) **1**(2):74-77, 1927.

The disease is carried by *Thrips tabaci* but the insect may disappear before the development of the symptoms.

**Plakidas A[ntonios] G[eorge]**

An obscure new disease of the strawberry in California. Phytopathology (Abstract) **15**(11):730, 1925.

Strawberry yellows, a degeneration disease of the strawberry. Phytopathology **16**(6):423-426, 1926.

A preliminary report giving description and stating that the disease is transmitted by the aphid (*Aphis fragaefolii*) and possibly by the red spider (*Tetranychus telarius*).

Strawberry xanthosis (Yellows), a new insect-borne disease. Journ. Agric. Res. **35**(12):1057-1090, 1927.

The author gives a description of the disease and proof that it is transmitted by *Myzus fragaefolii*. He also reports the finding of bodies which he designates as X and Y.

Strawberry dwarf. Phytopathology **18**(5):439-444, 1928.

A preliminary report. The evidence indicates that the disease is due to a virus which is carried by *Aphis forbesi*.

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Report on strawberry virus disease project. U. S. D. A. Plant Disease Reporter **13**(9): 129-131, 1929. (Rev. Appl. Mycol. **9**(3): 193, 1930.)

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The "June yellows" of Strawberries. Phytopathology (Abstract) **22**(1): 22, 1932.

**Poeteren, N[icolas] van**

Verslag over de werkzaamheden vanden plagenziektenbudingden diest in het jaar 1923. (Annual Report of the Phytopathological Service for 1923.) Verslag, en Mededeel. Plantenziekten. Diest Wageningen **34**: 1-66, 1924.

**Pompeu de Amaral, A.**

Mosaic. Bol. Agr. Sao Paulo (Brasil) **27**(4-5): 146-156, 1926.

**Poole R[obert] F[ranklin]**

Celery mosaic. Phytopathology **12**(3): 151-154, 1922.

The first description of the disease. It is carried by *Myzus persicae*.

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Celery mosaic. New Jersey Agric. Expt. Sta. Ann. Rpt. **1922**: 567-568, 1922.

-----  
Tomato crop losses may be reduced. New Jersey Agric. (New Brunswick) **6**: 5, 1924.

Popular.

**Porter, D. R.**

New onion disease in Iowa. U.S.D.A. Plant Disease Reporter **12**(8): 93-94, 1928.

Note on the occurrence of a new virus disease of onions in Iowa.

-----  
The infectious nature of potato calico. Hilgardia **6**(9): 277-294, 1931.

The author reports a calico disease of potato in California which appears to be due to a virus.

**Porter, R[upert] H[oward]**

Further evidence of resistance to cucumber mosaic in the Chinese cucumber. Phytopathology (Abstract) **18**(1): 143, 1928.

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Reaction of Chinese cucumber to mosaic. Phytopathology (Abstract) **19**(1): 85-86, 1929.

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A new mosaic disease of cucumber. *Phytopathology* (Abstract) **20**(1) : 113, 1930.

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The resistance of cucumber to mosaic. *Phytopathology* (Abstract) **20**(1) : 114, 1930.

-----  
The reaction of cucumber to types of mosaic. *Iowa State Coll. Journ. Sci.* **6**(1) : 95-99, 1931.

This paper gives the results of hybridization studies, cross-inoculations and a description of a new type of mosaic.

-----  
Reaction of tomatoes to mosaic. *Phytopathology* (Abstract) **22**(1) : 22, 1932.

**Price, W[illiam] C[onway]**

The thermal death rate of tobacco-mosaic virus. *Phytopathology* **23**(10) : 749-769, 1933.

A well illustrated article with tables and time-temperature curves showing the thermal death rate of tobacco-mosaic virus.

-----  
Local lesions on bean leaves inoculated with tobacco mosaic virus. *Amer. Journ. Bot.* **17**(7) : 694-702, 1930. (Boyce Thompson *Inst. Contrib.* **2**(10) : 549-557, 1930.)

The author gives the results of experiments showing that when bean leaves were inoculated with tobacco mosaic by rubbing the upper surfaces, necrotic lesions were formed on some and not on others. More virus was recovered from those with lesions than from those without lesions.

-----  
Acquired immunity to ring-spot in *Nicotiana*. Boyce Thompson *Inst. Cont.* **4**(3) : 359-403, 1932.

A thorough discussion of the subject, describing observations made by the author by experimentation. He emphasizes the environmental conditions influencing the disease. Gives the species of *Nicotiana* and varieties on which recovery was observed. No attenuation of the virus was obtained in cases of recovery; this conclusion was reached by actual experimental inoculations as well as the inoculation on recovered plants which showed no symptoms of reinfection. The disease persisted in plants propagated by cuttings through three generations, but was not transmitted through seed. No evidence was obtained from grafting experiments, that acquired immunity in tobacco was accompanied by the production of anti-bodies. The symptoms of tobacco mosaic in plants which recover from ring-spot are different from those in plants which recover from ring-spot disease. Certain plants are observed to be killed by ring-spot.

**Prince, W.**

A short treatise on horticulture, New York, p. 14-15, 1828.

This is the first exact description of peach yellows.

**Priode, C[arl] N[eal]**

Further studies in the ring-spot disease of tobacco. Amer. Journ. Bot. **15**(1) : 88-93, 1928.

This is a continuation of previous studies. The author gives the results of inoculations and some data on the effects of temperature on the virus.

-----  
Cuban streak. Phytopathology **23**(8) : 674-676, 1933.

Description of the symptoms of a new disease on POJ 2725 and CAC 323 sugar-cane varieties. The disease was named "Cuban streak" and tentatively attributed to a virus. The symptoms are different from those of sugar-cane South African streak. The insect vector of the South African streak *Cicadula mbila* is not known in Cuba.

**Pritchett, G. H.**

Eradication of Fiji disease at Calamba. Sugar Centr. & Planter News. **2**(10) : 413-416, 1921.

-----  
Points from cane affected with mosaic disease versus points from healthy cane at Hacienda Soledad owned by Mr. José Yunsay. Sugar Cent. & Planter's News **5**(5) : 243-247, 1924. (Rev. Appl. Mycol. **3** : 609, 1924.)

A comparison of results obtained from the use of healthy and diseased points.

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Insect pest and cane diseases. Louisiana Planter **73**(24) : 470-473, 1924. (Second Ann. Conf. Philippine Sugar Ass'n. Oct. 1-7, 1924.)

Popular account of Fiji and mosaic disease.

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Mosaic disease test of Hacienda Tres Corazones owned by Mr. Manuel González, Isabela, Occidental Negros. Sugar Cent. & Planters' News **6**(12) : 791-792, 1925. (Rev. Appl. Mycol. **5** (6) : 329-330, 1926.)

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The principal cane disease and insect attacks affecting the several estates of Negros (Philippines). Sugar News **8**(11) : 883-892, 1927. (Rev. Appl. Mycol. **7** : 345, 1927.)

Popular discussion of Fiji and mosaic diseases.

**Proida, P. A.**

(Mosaic of sugar beet) In V. P. Muraviov, *Mozaichnye Bolezni Sakharnoi Svekly* (Mosaic diseases of sugar beet.) Kiev S.S.U. Soiuzsakhara p. 11-66, 1930. (English abstract p. 64-66.)

Studies and field observations during 1925-1927. The disease is described. From year to year the disease may be transmitted through the roots, and insects act as carriers. No resistant varieties are known locally and sugar reduction due to the disease has not been estimated.

**Prunet, I[gnace] A[dolphe]**

La dégénérescence de la pomme de terre. (Degeneration of the potato.) *Prog. Agri. et Vitie* 73: 9-15, 1922.

**Purdy, Helen A[lice]**

Attempt to cultivate an organism from tomato mosaic. *Bot. Gaz.* 81(2): 210-217. (*Contr. Boyce Thompson Inst. Plant Res.* 1: 146-154, 1926.)

The writer conducted experiments following the methods of Olitsky but failed to find any evidence that the organism multiplied outside the living plant.

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Multiplication of the virus of tobacco in detached leaves. *Phytopathology* (Abstract) 17(1): 58, 1927. (*Amer. Journ. Bot.* 15(1): 94-99, 1928.)

The author inoculated healthy leaves after removal from the plant and gives evidence that the virus increased in these leaves.

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The improbability of tobacco mosaic transmission by slugs. *Amer. Journ. Bot.* 15(1): 100-101, 1928.

A brief paper giving proof that slugs are not carriers.

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Immunology reactions with tobacco mosaic virus. *Proc. Soc. Expt. Biol. & Med.* 25: 702-703, 1928. (*Journ. Expt. Med.* 49(6): 919-935, 1929.)

This paper gives the results of experiments along the line of those in practice in the study of virus diseases of animals.

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Specificity of the precipitating reaction in tobacco mosaic disease. *Contr. Boyce Thompson Inst.* 3(4): 529-540, 1931.

The viruses of tobacco ring spot and cucumber were used as antigens in precipitating tests with anti-serum for virus of tobacco mosaic.

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\* Appears as Helen Purdy Beale.

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Serologic reaction as a means of determining the concentration of tobacco mosaic virus. *Phytopathology (Abstract)* **23**(1): 4, 1933. (*Rev. Appl. Mycol.* **12**: 398, 1933.)

**Puttemans, A[rsene]**

O "mosaico" da canna de azucar. (The mosaic of sugar cane.) *Boll. Min. Agric. Ind. e Com. Brazil* **15**(2): 350-355, 1926. *Rev. Appl. Ent. Ser. A.* **15**: 67, 1926.)

**Putterill, V[ictor] A[rmsby]**

Tomato mosaic in South Africa. Plant diseases in the western Cape Provinces. IX. *Journ. Dept. Agric. South Africa* **7**(2): 131-141, 1923.

**Quanjer, H[endrik] M[arius]**

Nekrose der kartoffelpflanze, di Ursache der Blattrollkrankheit. (Necrose of potato plant, the cause of leaf-roll disease.) *Meded. R. Hoog. Land Tuin-en Boshbouwsch. Wageningen* **6**: 41-80, 1913.

-----, & **Oortwijn Botjes, J.**

(Review of experimentation in the Netherlands looking to the control of cereal and grass smuts and stripe disease.) *Ztrchr. Pflanzenkrank.* **15**(8): 450-460, 1915.

-----, **Lek, Henrik A[drians] A[braham] van der, & Oortwijn, Botjes J.**

Aard verspreidingswijze en bestrijding van phloemnecrose (Bladroll) en verwante ziekten. (Nature of spreading and combating phloem-necrose (Leafroll) and allied diseases.) *Meded. R. Hoog. Land Tuin en Boschbouwsch. Wageningen* **10**: 1-138, 1916. (*Gard. Chron.* 3 Ser. (1550): 124, 1916.)

-----, -----, & -----

Recherches sur la leptonécrose de la pomme de terre et les maladies apparentés, factes de 1907 a 1917. (Researches about the leptonécrose of potato and related diseases, occurring from 1907 to 1917.) *Ann. Soc. Agri.* **34**: 301-357, 455-494, 1918.

-----, & **Oortwijn, Botjes J.**

L'enroulement des feuilles (Leptonécrose) et la frisolée (mosaïque) de la pomme de terre. (Leaf-roll and curly dwarf of potato.) *Ann. Sci. Agron. Francaise et Etrangère* **36**: 262-280, 1919.

\* Appears as Helen Purdy Beale.

Phloem necrosis (leaf-roll) and mosaic (including curly dwarf) are similar. A very lengthy discussion including the results of experiments.

-----, Dorst, J[acobus] C[ornetis,] Dijt, M. D. & Haar, A[me] W[ilhelm] van der

De mozaiekte van de sonanceen hare verwantschap met de phloemnecrose en hare beteekenis voor de aardappelcultuur. (The mosaic disease of the *Solanaceae*: its relation to phloem-necrosis and its effect on potato culture.) Meded. van de Landbouw Hoogeschool deel, 17: 1-74, 1919.

A lengthy discussion of leaf-roll and mosaic. The leaf-roll is the same as phloem-necrosis or lepto-necrosis.

-----  
Mosaic disease of the *Solanaceae*, its relation to the phloem-necrosis, and its effect upon potato culture. *Phytopathology* 10(1): 35-47, 1920.

Gives the results of experiments demonstrating the similarity of tobacco, tomato and potato mosaic.

-----  
Considérations nouvelles sur les maladies de la pomme de terre. (New considerations of potato diseases.) *Bull. Soc. Path. Veg.* 7: 102-118, 1920.

-----  
Guide pour l'inspection aux champs et pour la sélection de pomme de terre. (Guides for field inspection and potato selection.) Imp. Veeman-Wageningen, Holland, 27 p., 1921.

-----, & Foex, E[dmund] E[tienne]  
Mission d'études sur les maladies de la pomme de terre, en France. (Mission for the study of the potato diseases in France.) *Ann. des Epiphyties*, 7: 267-280, 1921.

-----  
New work on leaf curl and allied diseases in Holland. *Int. Potato Conference. Roy. Hort. Soc. London* 1921: 127-145, 1921.

This paper is devoted primarily to a discussion of symptoms and of insect transmission.

-----  
De degeneratieziekten van de aardappelplant. (Degeneration disease in potato plant.) *Vakland voor Biologen* 11: 97-104, 117-121, 1921.

-----  
Een proef over de beteeknis van ziekten en ziekteverspreiding bij de pootgoedverwisseling, genomen door het Instituut voor Phytopathologie in 1920 en 1921.) (An experiment on the signif-

icance of disease and disease distribution relative to changing of seed potatoes, conducted by the Institute for Phytopathology in 1920-1921.) *Cultura* **34**: 135-141, 1922.

The greater the disease the greater the degeneration of potatoes.  
The greater the number of insects the greater the amount of disease.

-----  
General remarks on potato diseases of the curly type. Rept. Int. Conf. Phytopath. & Econ. Ent. Holland, p. 23-28. II. Veenman & Sons, Wageningen, 1923.

Krauselkrankheit and dwarf were used by earlier writers for diseases now known as leaf-roll, stripe, streak and different types of mosaic. The author discusses transmission and overwintering and describes a number of virus diseases of potatoes.

-----  
Un nouveau chapitre de la patyologie vegetale reliant cette science á la pathologie animale. (A new chapter in plant pathology connecting this science with animal pathology.) *Rev. Path. Veg. et Ent. Agr.* **10**(50): 22-40, 1923.

-----  
So-called "virus diseases" of plants; their symptoms, causation, mode of dissemination and economic importance from a physical point of view. *Brit. Ass'n. Adv. Sci. Rpt. (Abstract)* **91**: 492-493, 1923.

-----  
Standardizing of degeneration diseases of potatoes. *Phytopathology* **14**(11): 518-520, 1924.

The author discusses pure culture methods and the confusion resulting from overlapping symptoms.

-----  
So-called "virus diseases" of plants; their symptoms, causation, mode of dissemination, and economic importance from a physiological point of view. *British Assoc. Adv. Sci. Rpt. (Abstract)* **1923**: 492-493, 1924.

-----  
Kringeriheid bij aardappelen. (Curl disease of potatoes.) *Woordr. uit. o. d. Plantenteeltdag 30 Juni en 1 Juli, Wageningen* p. 50-54, 1926.

-----, & Elze, D[avid] L[eon]

Achterurtgang van pootgoed van gelijke afstamming in de verschillende vroege-aardappeldistricten. (The degeneration of seed of identical origin in the different early potato districts.) *Tijdschr. over Plantenziekten* **31**(1): 11-14, 1925.



Waarnemingen over "Kringrigheid" of "vuur" en over "net-necrose" van Aardappelen. (Observations on "sprain" and net-necrosis of potatoes.) Tijdschr. over Plantenziekten **72** (4) : 97-128, 1926. (English Summary.)

"Sprain" disease of potatoes is discussed at some length with reference to the work of contemporary investigators. It is stated that some diseases mentioned by others are synonymous with sprain. Brown or rust spots and net-necrosis are not accepted by the author. Attempts to isolate an organism have given negative results. Green manure and complete fertilizers appear to be beneficial while the cultivation of turnips accentuates the disease by inducing conditions in the soil. Varieties resistant to the disease are given.

-----, & Cortwijn, Botjes J.

Aardappelziekten van het "stippelstreepen "topnecrose" type en het vraagsteek der latentie en physiologische specialisatie. (Potato disease of the streak and top necrosis type and the problem of latency and physiological specialization.) Meded. Landbouwhoogesschool Wageningen **33**(7) : 3-44, 1929. (Rev. Appl. Mycol. **9**: 481, 1930.)

The "streak" of potato is a complex of virus diseases, including the following:

1. Stipplestreak Atanasoff which in a semi-latent form resembles Murphy's "crinkle". In some varieties it resembles mild mosaic.

In other varieties it is entirely masked.

2. Stipplestreak Koksiaan.
3. Stipplestreak Noordeling resembles crinkle but is not identical.
4. Stipplestreak Eersteling.
5. Topnecrosis latent in Duke of York.
6. Topnecrosis latent in Green Mountain.
7. Topnecrosis latent in the Dutch variety Monocraat.
8. Yellow Dwarf.

The author gives descriptions of all of these diseases.

-----, & Murphy, Paul A.

Proposal for coordinating researches on the virus diseases of the potato. Proc. Int. Cong. Plant Sci. (Ithaca, N. Y.) p. 122, 1929.

-----, Thung, T. H., & Elze, D[avid] L[eon]

"Pseudonet necrose" van de Aardappel. (Pseudo net necrosis of the potato.) Meded. Landbouwhoogeschool Wageningen. **33**(9) : 1-10, 1929. (With English Summary.) (Rev. Appl. Mycol. **9**: 483, 1930.)

The authors report an internal paranchyma necrosis both inside and outside the xylem ring; it is transmitted from the tuber by *Myzus per-*

*sicae*. There are no foliage symptoms. It is similar to the "hereditary sprain" reported by Fruwirth. Atanasoff believes this disease to be the same as the net-necrosis in America and that it is associated with acuba mosaic. The authors do not agree with Atanasoff. It develops in storage with a rise in temperature from 10° to 20° C.

-----, & Elze, D[avid] L[eon]

American and European leaf roll of potatoes. *Phytopathology* (Abstract) **20**(1): 137, 1930.

-----, Thung, T. H., & Elze, D[avid] L[eon]

Pseudonetnecrosis of the potato. *Phytopathology* (Abstract) **20**(1): 137, 1930.

-----, & Oortwijn, Botjes J.

Diseases of the streak type in potatoes. *Phytopathology* (Abstract) **20**: 138, 1930.

-----, Thung, T. H., Elze, D[avid] L[eon], & Likhite, V.

De virusziekten der Planten. (The virus diseases of plants.) *Landbouw.* **5**(10): 793-836, 1930. (With English summary.)

-----  
The methods of classification of plant viruses, and an attempt to classify and name potatoe viruses. *Phytopathology* **21**(6): 577-613, 1931.

The author secured the cooperation of the leading workers on the subject all over the world. An extensive bibliography is appended.

-----  
Die selektion der kartoffel und der Euifluss äusserer Umstände, insbesondere der Düngung, auf das Selektionsergebnis. (Potato selection and the influence of external condition, especially of manuring, on the outcome of selection.) *Ernährung der Pflanze* **27**(1): 1-8, 1931.

The author summarizes recent work by himself and his collaborators.

-----  
Methods of identification and differentiation of plant virus. *Fifth Int. Bot. Cong. Cambridge*, **1930**: 383-386, 1930.

-----  
Les maladies á virus des plantes cultivées. (Virus disease of cultivated plants.) *Second Inter. Cong. Path. Comp. (Paris)* **1**: 339, 1931.

A review of our knowledge of transmission, nomenclature and nature of virus diseases of plants.

-----  
 Die Autonomie der phytopathogen virusarten. (Autonomy of the plant pathogen of the virus kind.) *Phytopath. Zeitschr.* 4(2) : 205-224, 1931.

Important account with special reference to the potato. The author summarizes here his previous views on the nature of the phyto-genic viruses. His opinion in regard to the subject, is to attempt to unite the virus diseases under one collective heading, is opposed to the autonomous character of the phytopathogenic viruses.

-----  
 Tabaks-mosaik en vervante ziekte. (Tobacco mosaic and related diseases.) *Ned. Tijdschr. Hyg. Microb. Sewl.* 5(4) : 182-191, 1931.

-----, & Silberschmidt, K[arl]

Ueber eine komplexe viruskrankheit der Tomato. (About a complex virus disease of tomato.) *Phytopath. Zeitschr.* 5(1) : 1-98, 1932.

A study of necrosis in some of the complex virus diseases.

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 A complex virosis of tobacco. *Phytopathology (Abstract)* 23(1) : 28, 1933.

-----  
 Uber eine Komplexe Viruskrankheit des Tabaks. (On a complex virus disease of tobacco.) *Phytopath. Zeitschr.* 6(4) : 325-333, 1933.

Description of results obtained in continuation of previous work associated with Silberschmidt. The work is based on the effect of inoculating tomato plants with two kinds of virus, namely, ordinary tobacco mosaic and acronecrosis from outwardly healthy potatoes.

-----  
 Onderzoek naar de vatbaarheid voor plantenziekten. (The investigation of susceptibility to plant diseases.) *Tijdschr. over Plantenziekten* 39(10) : 163-167, 1933.

Brief discussion on the possibilities offered by the investigation of varietal susceptibility in the control of plant viruses. Among those mentioned are potato virus disorders.

**Quar, Sut Ni.**

Observations on mosaic. *Facts About Sugar* 20 : 183-185, 1925.

**Raciborski, M[aryan]**

Over serehchtige ziekteverschijnselen (On the sereh disease phenomena.) *Arch. Suikerindus. Nederl. Indië* 6 : 1021-1026, 1898.

-----  
Verlag Ontrent den stact van Sland Plantentium te Buitenzorg  
over het jaar. p. 73-78, 108-110, 1899.

-----  
A new disease of elm. Seventh Nat. Shade Tree Conf. Proc.  
Ann. Meeting, Aug. 27, 28, 29, 1931, p. 79-82, 1931.

**Racicot H[omé]ra] N[olé]**

Report of the Dominion Field Laboratory of Plant Pathology.  
Ste. Anne de la Pocatiere, P. D. (Report Dominion Botanist  
for the year 1928 of Botany, Canada Dept. of Agric. 1929:  
199-202, 1930. (Rev. Appl. Mycol. 9:502, 1930.)

Contains experiments on seed transmission of bean mosaic.

**Rama Rao, D. A., & Sreeniyasaya, M.**

Contributions to the study of spike-disease of sandal (*Santalum  
album*. Lin. 4, 5. Part IV. Chemical Composition and  
spiked sandal stems. Journ. Indian Inst. Sci. 11A(19): 241-  
247, 1929.

This paper gives the results of a chemical study of this disease.

**Rand, F[rederick] V[ernon], & Pierce, W[illiam] Dwight.**

A coordination of our knowledge of insect transmission. Phy-  
topathology 10: 187-231, 1920.

A very excellent discussion of the subject and a bibliography of  
173 titles.

-----, Ball E[mer] D[arwin], Caesar, L[awson], & Gard-  
ner, M[ax] W[illiam]

Insects as disseminators of plant diseases. I. Result of past in-  
vestigations. Phytopathology 12: 225-228, 1922.

Each of the authors discusses a phase of the subject as follows:

- I. Results of past investigations by Rand.
- II. Systematic relations of carriers by Ball.
- III. Control of problems by Caesar.
- IV. Urgent problems of the future.

All of these papers which they have quoted, contains brief references  
to virus diseases.

-----  
Pecan rosette: Its histology, cytology and relation to other chlo-  
rotic diseases. U.S.D.A. Bul. 1038, 42 p., 1922.

A very thorough study of the disease with special attention to the  
histology, cytology and relation to other chlorotic diseases.

-----  
Status of pecan rosette. Amer. Nut. Journ. 16: 56-57, 1922.

**Rands, R[obert] D[elafield], & Sherwood, S[idney] F[orsythe]**

Yield tests of disease-resistant sugar cane in Louisiana. U. S. D. A. Dept. Circ. **418**, 18 p., 1927. (Rev. Appl. Mycol. **6**: 752, 1927.)

-----, -----, & **Stevens, F[rederick] D[elos]**  
 Sugar-cane variety tests in Louisiana during the crop year 1926-27. U. S. D. A. Circ. **36**, 1928. (Rev. Appl. Mycol. **8**(1): 62, 1928.)

This paper gives the results of field mill tests of canes that are mosaic-tolerant to determine their relative values.

-----, & **Summers, Eaton M.**  
 Studies on apparent recovery of certain sugar-cane varieties from mosaic in Louisiana. Fourth Congress Interna. Soc. Sugar-Cane Technologists, Puerto Rico, 1932. Bull. **123**, 7 p., 1933.

This paper presents some field observations and experimental evidence on apparent recovery from mosaic of commercial sugar-cane varieties in Louisiana.

**Rangel, E[ugenio dos Santos]**

O combate ao mosaico. (Mosaic disease control.) Bol. Agric. Bahia **1926**: 26-24, 1926.

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 O combate ao mosaico. (Mosaic disease control.) A. Lavoura **30**: 203-204, 1926.

**Rankin, W[illiam] H[oward], Hockey, J[ohn] F[rederick], & McCurry, J[ohn] B[ruce]**

Leaf curl and mosaic of the cultivated red raspberry. Phytopathology (Abstract) **12**: 58, 1922.

-----, & -----  
 Mosaic and leaf curl of the cultivated red raspberry. Dom. Expt. Farm; Div. Bot. Circ. n.s. 1, 1922. (Phytopathology **12**(6): 253-264, 1922.)

Very complete description of these diseases which appear to be carried by *Aphis rubiphila*.

-----  
 Raspberry mosaic and mosaic-free planting stock. N. Y. State Hort. Soc. Proc. **68**: 272-280, 1923.

This disease is the most important cause of low yields. The author gives descriptions, a discussion of methods of transmission, methods of control and other interesting data.

-----  
 Running-out of raspberries. New York Agric. Expt. Sta. Circular **67**, 12 p., 1923.

This is attributed to mosaic, leaf curl and rosette.

-----  
Raspberry diseases. N. Y. Hort. Soc. Proc. 69: 139-145, 1924.  
Popular.

-----  
Raspberry mosaic and blue stem. New York (Geneva) Agric.  
Expt. Sta. Circ. 75, 4 p. 1924.  
Popular.

-----  
Raspberry mosaic control in the Hudson River Valley. New  
York Hort. Soc. Ann. Meet. Proc. 71: 173-178, 1926.  
Popular.

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Mosaic of raspberries. New York (Geneva) Agric. Expt. Sta.  
Bull. 543: 60 p., 1927.

The author describes the symptoms, gives results of roguing, rate of spread, varietal susceptibility and much other important data, including experimental proof that the important vectors are *Aphis rubiphila* and *Amphoraphora rubi*.

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Mosaic of red and black cultivated raspberries. Phytopathology  
(Abstract) 17(1): 46, 1927.

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Probable identity of red and mild mosaic of black raspberries.  
Phytopathology (Abstract) 20: 125-126, 1930.

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Virus diseases of black raspberries. New York (Geneva) Agric.  
Expt. Sta. Tech. Bull. 175, 24 p., 1931.

The writer classifies the raspberries mosaic.

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Raspberry mosaic control in the Hudson Valley, New York.  
Agric. Expt. Sta. Circ. 142, 4 p. 1934.  
Popular.

**Rao, P. S.**

The cause of spike in sandal (*Santalum Album.*) Indian For-  
ester 46: 469-487, 1920.

The disease may depend on sap density of the parent plant; there-  
fore, an abnormal physiological reaction. Gives reason for his opinion.

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Physiological anatomy of the spiked leaf in sandal. Indian For-  
ester 47: 351-360, 1921.

Gives a discussion of the structure and refers to the increase in  
starch, especially in the older leaves.

**Rao, Rama**

Field investigations of spike in sandal on the Kollimalai hills. Indian Forester **44**: 58-65, 1918.

Spike disease was found 80 miles from infested area. Observations on the ecological conditions are given with a list of 57 lots of sandal trees.

**Rao, Y. V. S.**

Contribution to the study of the spike-disease of Sandal (*Santalum album* Linn.) Part XIII. Investigations of the hexone bases. Part XIV Study of mosaics associated with mosaic areas. Journ. Indian Inst. Sci. **16A**(8): 91-95, 1933.

Report of analysis of healthy and diseased leaves of sandal as to nitrogen, amino acids, histidine and histamine contents.

Biochemical studies of *Gislkia* and *Ageratum* mosaics in relation to spike of sandal areas.

**Rapson, C. J.**

Control of streak disease in Uba Cane. Proc. 3rd Ann. Congr. South African Sugar Assoc. p. 10-12, 1925. (South African Sugar Journ. **Ann.** p. 154-157, 1925.)

**Rathschlag, H.**

Mosaik krankheit an der dahlia. (Dahlia mosaic disease.) Blumen N. Pflanzenb. **44**: 148, 149, 1929.

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Mosaikkrankheit an salat. (Lettuce mosaic disease.) Obst. u. Gemüseb. u. **75**: 114, 115, 1929.

**Ravn, F[rederik] K[olpin]**

On mosaiksygen og beslaegtede Plantessygdomme. (Mosaic disease and allied plants diseases.) Nord. Jordbrugforsk **1**: 10-24, 1919.

**Rawlins, T[homas] E[lsworth], & Johnson, James.**

Cytological studies of the mosaic disease of tobacco. Amer. Journ. of Botany **12**(1): 19-32, 1925. (Phytopathology (Abstract) **14**(1): 55-56, 1924.)

A discussion of three types of bodies found in cells of mosaic plants.

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Cytology of root tips from sugar beets having curly-top disease. Phytopathology (Abstract) **16**(10): 761, 1926.

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Research on viruses causing plant diseases. Science n.s. **65** (1686): 398, 1927.

A very short paper on the nature of filterable viruses in which the author suggests several lines of research.

-----, & Horne, W[illiam] T[itus]

A graft infectious disease of the cherry. *Phytopathology* (Abstract) **20**(10) : 853, 1930.

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"Buckskins", a destructive graft-infection disease of the cherry. *Phytopathology* **21**(3) : 331-335, 1931.

A disease of cherries in northern California which is transmitted by grafting.

**Ray, J[ulien Charles Michel]**

Sur les maladies de la canne á sucre. (The diseases of sugar cane.) *Bull. Soc. Mycol. France* **12**(4) : 139-143, 1896.

**Read, W. H.**

Physiological investigations of mosaic disease of the tomato. Expt., & Res. Sta. Cheshut Herts., 1931, *Ann. Rpt.*, **17**:44, 1932.

A preliminary report indicates that total and reducing sugar rise for about 8 days and begin to fall after 20 days.

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Physiological investigations of mosaic disease of the tomato. Expt. & Res. Sta. Cheshut Herts, 1932. *Ann. Rpt.*, **18**: 45-48, 1933.

Continuation of previous work.

**Reddick, Donald, & Stewart, V[ern] B[ohnam]**

Varieties of beans susceptible to mosaic. *Phytopathology* **8**(10) : 530-534, 1918.

The authors give the results of many tests which indicate that field selection of apparently healthy seed does not control the disease.

-----, & -----

Transmission of the virus of bean mosaic in seed and observations of thermal death-point of seed and virus. *Phytopathology*, **9**(10) : 445-450, 1919.

The disease is transmitted by rubbing the leaves of young plants with crushed leaves from diseased plants but not by injecting. Dry heat range from 50 to 80° C. (1 to 24 hours) reduced germination but did not kill the virus.

-----, & -----

Additional varieties of beans susceptible to mosaic. *Phytopathology*, **9**(3) : 149-152, 1919.

Gives the records of additional work.



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A hybrid bean resistant to anthracnose and to mosaic. Phytopathology (Abstract) **12**(1): 47, 1922.

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La transmisión du virus de la mosaïque du Haricot par le pollen. (The transmission of mosaic virus in Kidney beans by the pollen.) Second Cong. Inter. Path. Comp. (Paris) **1**: 363-366, 1931.

The mosaic disease of beans (*Phaseolus vulgaris*) is transmissible by pollen.

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A potato disease. Phytopathology **23**(7): 622-624, 1933.

Brief note describing a disease which seems to be due to a virus.

**Redpath, W. H.**

A planter's experience with mosaic disease and the planting of Uba Cane. Journ. Jamaica Agric. Soc. **29**(1): 18-21, 1925. (Rev. Appl. Mycol. **4**: 442, 1925.)

**Reed, H[oward] S[prague], & Craybill, C[harles] H[arvey]**

Notes on plant diseases in Virginia observed in 1913 and 1914. Virginia Sta. Tech. Bull. **2**: 37-58, 1915.

**Reesema, Geerts van, et al**

Mosaic disease in Java. P. O. J. canes not immune. (A review of a technical article in Java.) Archief. **32**: 301-309. (Facts About Sugar **19**(21): 496, 1924.)

**Reid, Katherine W[illess]**

Variegated Abutilons. Journ. New York Bot. Garden **15**: 207-213, 1914.

A historical discussion.

**Reiling, H.**

Einige neuere Virus-Krankheitsformen. (A new virus disease form.) Deutsche Landw. Presse **55**(15): 219, 1928.

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Beiträge zur kenntnis der Viruskrankheit der Kartoffel. (Contribution to the study of virus diseases of the potato.) Pflanzenbau **5**: 284-290, 1929.

**Reincke, R.**

Experimentaluntersuchungen über die Chlorose del gelben Lupine. (Experimental investigations about chlorosis of yellow lupin.) Dungg. Bodenkd. A. **23**: 77-104, 1931.

**Reinking, Otto A[ugust]**

A Disease of Economic Plants in Southern China. The Phil. Agricul. **8**: 109-134, 1919.  
A popular discussion.

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Fiji disease of cane. Sugar Cent. and Planters' News. Philippine Is. **1**(1): 15-20, 1920. (Facts About Sugar **12**: 272-273, 1921.)

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Diseases of sugar cane in the Philippines. Sugar Cent. and Planters' News, **1**(2): 41-48, 56, (3)94-120, (8): 335-336, (14) 22-30, 35-39, 43, 1920, (15): 18-22, **2**(5): 190-191, 1921.  
Popular.

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Fiji diseases of sugar cane. Sugar Cent. & Planters' News. **2**(2): 41-48, 1921.  
Gives a description and states that the disease is very destructive. Some varieties are very resistant.

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Fiji disease of sugar cane in the Philippine Islands. Phytopathology **11**(8): 334-336, 1921.

**Reitmair, Otto**

(The leaf-roll disease of the potato.) Ztschr. Landw. Versuchsw. Osterr., **13**(1): 48-52, 1910.

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Biologische Studien über die Blattrollkrankheit der kartoffel. (Mitteilungen des Komitees zum Studium der Blattrollkrankheit der Kartoffel, No. 4). (Biological studies about the leaf-roll disease of potato. Report of the committee for the study of potato leaf-roll disease No. 4.) Zeitschrift für des Landw. Versuchs. Oesterr., Jahrg. **15**(1): 1-106, 1912.

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(Report of the committee for study of leaf-roll—VII Biology of the potato plant with particular reference to leaf-roll.) (Ztsch. Landw. Ver. Ostr., **16**:(6) 653-717, 1913.

**Remy, L.**

Mutation in mosaïque. (Mutation on mosaic.) Compt. Rend. Acad. Sci. Paris **187**: 607-609, 1928.

**Remy, Th[eodere] & Schneider, G[eorge]**

Beobachtungen über das auftreten der Blattrollkrankheit. Fühlings Landswirts Zeitung, Jahrg. **58**(6): 201-219, 1909.

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 Die mosaikkranheit der Kartoffel. (Mosaic disease of potato.)  
 Veröffentl. Landw. Ammer Rheinprov. No. 2: 93-95, 1919.

**Reyes, G[audencio] M.**

Mosaic disease of sugar cane. Philippine Agric. Rev. 20(2): 187-228, 1927. (Rev. Appl. Mycol. 7: 197, 1928. Facts About Sugar 23: 34, 1928. U. S. D. A. Expt. Sta. Rec. Abs. 59: 643, 1928.)

A history of the disease in the Philippine Islands with discussion of methods of control including a list of resistant varieties.

**Reynolds, Ernest Shaw.**

Two tomato diseases. Phytopathology 8: 535-542, 1918.

Leaf chlorosis is regarded by the author as the so-called mosaic. Was unable to transfer it by rubbing; external application of iron salts failed. One of the diseases in this paper is a chlorosis which the author describes as a new virus disease.

**Richards, B[ert] L[orin]**

A new and destructive disease of the potato in Utah and its relation to the potato Psyllid. Potato Ass'n Amer. Proc. 14: 94, 1928. (Phytopathology (Abstract) 18(1): 140-141, 1928.)

Description of the disease and a report of its spread. Associated with the potato psyllid (*Paratrioza cockerelli*).

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 Botany and plant pathology in Utah. Utah Agric. Expt. Sta. Bull. 209: 44-51, 1929.

Notes on leaf-roll and mosaic diseases of potatoes, psyllid yellows, mosaic and western blight of tomatoes.

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 Further studies with psyllid yellows of the potato. Phytopathology (Abstract) 21(1): 103, 1931.

-----, & Blood, H[eber] L[oran]

Psyllid yellows of the potato. Journ. of Agric. Res. 46: (3): 189-216, 1933.

The authors give the history, description of this disease which is associated with *Paratrioza cockerelli*. In their summary they say: "The true nature of the infective principle injected into potato plant by *Paratrioza cockerelli* at present remains unknown. Available facts, however, question somewhat the virus theory of the disease and suggest the possible existence of some toxic substance which is produced in some way during the feeding process of the psyllid nymphs. Additional facts will be necessary before final conclusions can be drawn as to the true etiology of psyllid yellows."

**Richardson Kuntz, P[edro Alejandro]**

Estudios comparativos de las cañas Kavangire, Zuinga y Cayanna 10. Ins. Expt. Sta. Puerto Rico. Circ. **73**, 11 p., 1923.

Popular comparative descriptions of these varieties and reference to its tolerance to sugar-cane mosaic.

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La producción de nuevas variedades de caña y sus resultados experimentales. (Sugar-cane varieties production and its experimental results.) Ins. Expt. Sta. Puerto Rico Bull. **28**, 67 p., 1931.

Popular information of data of experimental field tests of new varieties of sugar cane in regard to susceptibility and immunity to the mosaic disease.

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El mosaico en las nuevas variedades de caña de azúcar P. R. 803; P. R. 807; F. C. 916 y S. C. 12(4). (Mosaic on the new sugar-cane varieties. P. R. 803; P. R. 807; F. C. 916 and S. C. 12(4). Ins. Expt. Sta. Puerto Rico Circ. **96**, 10 p., 1932.

Field test to try the above-mentioned varieties in regard to mosaic immunity. P. R. 803 and F. C. 916 are highly tolerant, P. R. 807 commercial immune and S. C. 12(4) used as check highly susceptible. Results given in tabular form.

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Resistencia relativa al matizado de cañas producidas en el país comparadas con las importadas. (The relative resistance to mosaic of native grown and imported canes.) Ins. Expt. Sta. Puerto Rico. Circ. **101**, 23 p., 1932.

Full details are given of the author's comparative observations on the relative productivity and resistance to mosaic of the locally produced and imported sugar-cane varieties in Puerto Rico. He reports that the Puerto Rico seedlings P. R. 803 and 807 and F. C. 916 were superior both in regard to yields and resistance to mosaic. Among the foreign, P. O. J. 2878 proved superior to B. H. 10(12) and S. C. 12(4) in both respects.

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Cane varieties in Puerto Rico. Facts About Sugar **27**(12): 530-532, 1932.

The author emphatically states that mosaic is the only sugar-cane disease of real economic importance in Puerto Rico. He also assures that its control, to day, presents virtually no difficulty.

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**Ridler, W[inifred] F[rances] F[urze]**

The structure of reverted black currants. Univ. Bristol Ann. Rpt. Agric. & Hort. Res. Sta. p. 73-74, 1923.

The diseased plants have less vascular tissue and more medullary ray tissue than the healthy plants. The diseased plants also produce a

gum which blocks the conducting tissues. The fruits from diseased plants contain less vascular tissues than those from healthy plants.

Investigation of the structure of reverted black currants. *Ann. Appl. Biol.* **11**(2): 252-260, 1924.

The author states that no actual qualitative differences in structure have been observed between normal and reverted plants of black currants (*Ribes nigrum*). The most marked difference is in amount of gum and wood.

**Rietsema, J.**

Weinig bekende ziekten in kers, Pruim en Persik. (Little known diseases in Cherry, Plum and Peach.) *Tijdschr over Plantenziekten* **36**(11): 261-266, 1930.

Cherry and plum virosis is sometimes associated with a form of mosaic.

**Riha, J.**

(Correlation coefficient for estimating the reduction in yields caused by the more important of our potato diseases.) *Och-rana Rostlin*, Prag. **8**: 58-61, 1928.

(Is the mosaic disease of potatoes as injurious as leaf roll?) *Zemedesky Arch. Prag.* **19**(3-4): 134-140, 1928.

**Rischkow, V[itolij] L.\***

Neue Daten über geaderte Panaschierung bei *Evonymus japonicus* und *Evon. radicans*. (New data on veined mottling in *Evonymus japonicus* and *E. radicans*.) *Biol. Zentralbl.* **47**(12): 752-764, 1927. *Rev. Appl. Mycol.* **9**(3): 195, 196, 1930.)

The chlorosis is transmitted by grafting but not by insects.

(Infectious chlorosis in *E. japonicus* and *E. radicans*.) *Journ. All-Russ. Congr. Bot. Leningrad* (Abstract) p. 184-185, 1928.

., & **Karatschewsky, I. K.**

Chlorophyllmangel und Erzymwirkung I. Katalasewirkung bei Panaschierung und Mosaikkkrankheit. (Chlorophyll deficiency and enzymatic action I. Catalase action in variegation and mosaic diseases.) *Beitr. Biol. der Pflanzen.* **20**(3): 199-220, 1933.

Extensive account well illustrated with tables. Gives also results with other variegated plants.

**Rivas, Dámaso**

Filterable Viruses Peculiar to Plants. *Human Parasitology*, p. 222-223, 1920.

\* Also appears as Rizhkov, V. L.

**Rivers, Thomas M.**

Filterable viruses. A critical Review. Journ. Bact. **14**:217-255, 1927.

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The Nature of viruses. Physiol. Rev. **12**(3):423-452, 1932.

**Robb, W.**

Scottish Society for Research in Plant Breeding. Report of the Director of Research to the Annual Meeting 13th July 1933, 32 p., 1933.

This report deals entirely on the behaviour of virus diseases of the potato plant with special reference on leaf-roll disease.

**Robbins, Wilfred William**

Mosaic disease of sugar beets. Phytopathology (Abstract) **11**(1):48, 1921.

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Mosaic disease of sugar beets. Phytopathology **11**(9):349-365, 1921.

Gives a description of a disease which is different from curly top. The disease is carried by *Myzus persicae*. It is carried over winter in the siloes.

**Robertson, N. F.**

Mycology. Report Dept. Agric. Burma, 1927, p. 11-12, 1927. (Rev. Appl. Mycol. **7**:559, 1927.)

A brief reference to sugar-cane mosaic in three new localities.

**Robertson, J. N., & Smith, A. M.**

A study of the hydrogen-ion concentration of the potato tuber. Biochem. Journ. **25**(3):763-769, 1931.

**Rochlin, Emilia, J.**

Zur anatomie der mosaikkranken kartoffel pflanzen. (On the anatomy of mosaic diseased potato plants.) Phytopath. Zeitschr. **2**(5):455-468, 1930. (Materials for Mycol. & Phytopath., Leningrad. **8**(2):145-154, 1931.)

These studies show structure changes in the phloem of leaf-roll, rugose mosaic, curly dwarf and stipple streak. Also some changes in the medullary and cortical tissue.

**Rosa, Joseph Tooker**

Chemical changes accompanying the western yellow blight of tomato. Plant Physiology **2**(1):163-169, 1927.

The chemical changes in the tomato caused by this disease are different from those caused by the same virus (curly top) in sugar beets.

**Rosen, H[arry] R[oberts]**

Mosaic disease of sweet potatoes. Arkansas Agric. Expt. Sta. Bull. **167**, 10 p., 1920.

Disease first recognized by the author in 1918. It is a hereditary but non-infectious chlorosis. Recommendations for control.

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Corn mosaic in Arkansas. Phytopathology (Abstract) **12**(5): 250, 1922.

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Mosaic disease of corn in Arkansas. Phytopathology (Abstract) **12**(5): 252, 1922.

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Sweet potato mosaic and its incubation period of two growing seasons. Phytopathology (Abstract) **16**(1): 74, 1926.

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The mosaic disease of sweet potatoes with special reference to transmissibility. Arkansas Agric. Expt. Sta. Bull. **213**, 16 p., 1926.

This paper gives the results of inoculation experiments which show that the disease develops very slowly. The conditions for its spread are much better in the southern than in the northern States.

**Rosenfeld, A[rthur] H[inton]**

Kavangerie: Puerto Rico mosaic disease-resisting cane. Int. Sugar Journ. **22**: 26-33, 1920.

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Aspecto beneficioso del mosaico de la caña de azúcar. (Beneficial aspect of the sugar-cane mosaic disease.) Rev. Agric. Puerto Rico **12**: 7-14, 1924. (Int. Sugar Journ. **26**(304): 191-195, 1924.)

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La causa del matizado. Un paso hacia la solución de este misterio. (The Cause of Mosaic. One step toward the solution of this mystery.) Rev. de Agricultura de Puerto Rico **13**(3): 145-148, 1924; (Int. Sugar Journ. **26**(310): 535-536; Facts About Sugar **19**(18): 425. Trop. Agric. **64**(1): 38-40, 1925.)

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"The Java P. O. J. canes in Tucumán and Puerto Rico." Dept. Agric. Journ. Ins. Expt. Sta. Puerto Rico **8**(3): 1-44, 1925.

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Selección de caña para la plantación. (Sugar-cane selection for the planting.) Sugar **28**(3): 153-155, 1926.

-----  
A monograph of sugar-cane varieties. Journal Dept. Agric., P. R. Vol. XI, 1927.

Contains some data on mosaic.

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Lessons from the renaissance of a Sugar Industry. Int. Sugar Journ. 29(348): 634-641, 1927. (Rev. Appl. Mycol. 7: 400-401, 1927.)

The author discusses the relationship of mosaic to varieties.

**Rosenthal, H.**

Viruskrankheit bei schwarzen Johannisbeeren. (Virus disease of black currants.) Obst-und Gemüseb., 76(1): 14, 1929. (Rev. Apply Mycol. 9: 394, 1930.)

A brief note on the reversion of black currants in Holland.

**Rouzinoff, P. G.**

(Some data on the physiology of potato leaf-roll.) Morbi Plantarum, Leningrad 19(3-4): 148-159, 1920.

The experiment discussed by the author was with the view to find a rapid laboratory method for determining the virus diseases in potato plants.

**Roxas, M[anuel] L[uz]**

Select your cane points for seed. Sugar Central & Plant News, 1: 16, 17, 1920.

**Rozhdestvenskij, N. A.**

(Virus diseases on potatoes and other plants.) Journ. All-Russ. Congr. Bot. Leningrad (Abstract) p. 183, 1928.

**Ruggles, Arthur Gordon, & Winter, J. D.**

Aspects of mosaic of the red raspberry from the standpoint of the nursery inspector. Minnesota Hort. 54: 79-85, 1926. (Journ. Econ. Ent. 19(2): 365-370, 1926.)

Field observations and discussions.

-----  
Results of three years' experience in the control of mosaic in red raspberries in nurseries. Journ. Econ. Ent. 20(3): 478-483, 1927.

The author gives the results of roguing experiments which led to the conclusion that the disease can be controlled in this manner.

**Rusconi, A.**

Osservazioni e considerazioni sulla clorosi del pesco nell. Albeigianese. La Costa Azzura Agr: Floreale, Sanremo 18(9): 324-327, 1933.



**Rutgers, A[braham] A[rnold] L[odewyk]**

Die krulziekye van katjang tanah (*Arachis hypogaea*.) Meded.  
v. d. Afdeeing v. Plantenziekt. **6**: 1-5, 1913.

**Salaman, R[edcliffe] N[athan]**

Degeneration of potatoes. Int. Potato Conference Roy. Hort.  
Soc. Ann. Rpt. p. 79-90, 1921.

Believes that "running out" is not due to vegetatively propagation  
but to mosaic which has for years been known as "curl".

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Potato seedling mosaic. Brit. Assoc. Adv. Sci. Rpt. (Abstract)  
**91**: 493-494, 1923.

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Degeneration of the potato. An urgent problem. Journ. Nation.  
Inst. Agric. Bot. **3**: 39-51, 1925.

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A note on the production of premature sprouting in the potato  
and its application to the study of virus diseases. Journ.  
Agric. Sci. **17**(4): 524-529, 1927.

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Gives the results of physiological experiments.

-----  
Virus diseases of the potato; Streak. Nature **126**(3172): 241,  
1930.

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The relationship of streaks to some other virus diseases.

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Crinkle "A" an infectious disease of the potato. Proc. Roy.  
Soc. London ser. **B**. **106**(B741): 50-83, 1930. (Rev. Appl.  
Mycol. **9**: 603, 1930.)

-----  
The author describes this disease and gives proof that it is caused  
by a virus.

-----, & Le Pelley, R[ichard] H[enry]  
"Para-crinkle": a potato disease of the virus group. Proc.  
Roy. Soc. London ser. **B**. **106**(13): 140-175, 1930.

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The authors give the results of experiments on virus diseases, with  
special attention to "crinkle A."

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Les maladies á virus de la pomme de terre. Leur analyse et  
leur synthése. (The virus disease of potato. Its analysis and  
its synthesis.) Second Inter. Cong. Comp. Path. Fac. Méd.  
Univ. Paris **1**: 451, 1931.

-----, Bawden, F. C.  
An analysis of some necrotic diseases of the potato. Proc. Roy.  
Soc. London. ser. **B**. **111** (B769): 53-73, 1932.

The authors review the literature on streak disease of the potato. They accept Quanjer acropetal necrosis as a symptom of stipple streak and of acronecrosis or top necrosis. They also discuss symptoms produced by Kenneth M. Smith's X and Y viruses.

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The analysis and synthesis of some diseases of the mosaic type; the problem of carriers and auto-infection in the potato. Proc. Roy. Soc. ser. B. **110**(B766) : 186-224, 1932.

An extensive account describing in detail experiments in which the author has obtained evidence that, besides Smith's X and Y viruses, there is a third element which he designates the Z virus. He made cytological studies and summarizes recent developments.

-----  
Protective inoculation against a plant virus. Nature **131**(3309) : 468, 1933.

Description of experiments carried by the author, on inoculations with plant viruses.

**Salmon, E[rnest] S[tanley]**

Fifth report on the trial of new varieties of hops 1921. East Malling Res. Sta. 1922.

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Mosaic disease of hops. Journ. Min. Agric. **29**(10) : 927-934, (Journ. Inst. Brewing **29** : 882-889, 1923.)

A discussion of this disease which is evidently due to a virus.

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Sixth report on the trial of new varieties of hops. East Malling Res. Sta., 1923.

A continuation of the proceedings.

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Seventh report of the trial of new varieties of hops, 1923. Journ. Inst. of Brewing **30**(8) : 671-689, 1924.

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Eighth report on the trial of new varieties of hops. East Malling Res. Sta. p. 33, 1925.

-----, & Ware, W[illiam] M[elville]  
Virus diseases and the grafting of the hop. Gard. Chron. ser. 3, **77**(2002) : 320-322, 1925.

-----, & Wormald, H.  
Diseases of the hop crop. Min. Agric. Misc. Publ. **42** : 41-58, 1925.

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Notes on a visit to the hop growing districts of Bohemia. Czechoslovakia Journ. Inst. of Brewing **31**(10) : 514-521, 1925.

Eleventh report on the trial of new varieties of hops, 1926.  
East Malling Res. Stat. Kent. 34 p., 1927.

Notes on the ten new seedling varieties of hops used in the brewing experiments at Manchester, 1926. Journ. Inst. Brewing **33**: 570, 1927.

Notes on three varieties of hops. Journ. Inst. Brewing n. s. **33**: 12-14, 1927.

Tenth report on the trial of new varieties of hops. East Malling Res. Sta. p. 34, 1927.

-----, & Ware, W[illiam] M[elville]

The mosaic disease of the hop; grafting experiment I. Ann. Appl. Biol. **15**(3): 342-351, 1928.

The authors give the results of grafting experiments.

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Inter-specific grafting in Humules. Gard. Chron. ser. 3. **83**: 396, 1928.

Twelfth report on the trial of new varieties of hops, 1928. Journ. Inst. Brewing, n. s. **26**(11): 523-532, 1929. (Rev. Appl. Mycol. **9**(2): 130-131, 1930.)

A record of a severe outbreak of mosaic.

-----, & Ware, W[illiam] M[elville]

Report from the Mycological Department. Journ. South Eastern Agric. Coll. Wye., Kent., **26**: 165-172, 1929. (Rev. Appl. Mycol. **9**(1): 15, 1930.)

Brief reference to diseases of potatoes and hops that may be viruses.

-----, & -----

The chlorotic disease of the hop, I. Ann. Appl. Biol. **17**(2): 241-247, 1930.

The authors describe a new hop disease of the virus group and propose the names "Chlorotic disease" for its physical appearance. Two instances to record where the disease is transmitted artificially.

-----, & -----

The chlorotic disease of the hop, II. Ann. Appl. Biol. **19**(1): 6-15, 1932.

Continuation of previous work. Studies on transmissibility of this type of virus disease which is observed to be easily transmitted by grafting, budding and rubbing juice from infected plants on wounded

surfaces of healthy plants. This behaviour clearly distinguishes the chlorotic disease from the other two virus diseases of hops, i. g. mosaic and nettlehead, which up to the present are only transmitted by grafting.

-----, & -----

The chlorotic disease of hop, **III**. Ann. Appl. Biol. **19**(4) : 518-528, 1932.

This disease is transmitted by grafting. The authors give the results of experimental work.

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Mycological Department. Journ. South Eastern Agric. Coll., Wye, Kent. **29** : 15-22, 1932.

**Samson, R[ayburn] W[alter]**

A study of the properties and nature of the virus of the spindle tuber disease of potatoes. Unpublished Thesis Univ. Nebraska Library, 1927.

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Relation of Jimson weed to certain viruses of tomato and potato. Phytopathology (Abstract) **20**(1) : 136, 1930.

**Samuel, G[oeffrey]**

Nature of disease-producing viruses. Nature **125**(3141) : 51, 1930. (Rev. Appl. Mycol. **9** : 397, 1930.)

-----, **Bald, J[ames] G[rieve], & Pittman, H[arold] A[mbrrose Jaques]**

Investigations on "Spotted wilt" of tomatoes. Commonwealth of Australia Council for Sci. & Ind. Res. Bull. **44**, 64 p., 1930.

This paper gives a description of the disease, results of experiments on transmission and other host plants. The disease is carried by *Frankliniella insularis*.

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Tomato diseases in South Australia and how to control them. Journ. Dept. Agric. South Australia **34**(2) : 154-156; (3) : 253-272; (4) : 369-377; (5) : 499-510, 1930.

Spotted wilt and streak on tomato is reported. Mosaic appears to be a glasshouse disease.

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Summary of plant disease records in South Australia for the two years ending June 30th, 1930. Journ. Agric. South Australia **34** : 746, 1931.

Brief note on turnip mosaic.

-----, & -----  
*Thrips tabaci* as a vector of plant virus disease. *Nature* **128**  
 (3229) : 494, 1931.

The authors confirm the work of Pittman and K. M. Smith that the spotted wilt of tomato is carried by *Thrips tabaci* but find that *Frankliniella insularis* can not transmit it, except in the larval stage.

-----  
 Some experiments on inoculating methods with plant viruses, and on local lesions. *Ann. Appl. Biol.* **18**(4) : 494-507, 1931.

The author inoculated tobacco plants with cucumber mosaic and yellow tobacco mosaic by means of light rubbing without visible injury and by scratching with a needle. The former method was more successful than the latter. This supports the work of Holmes.

-----, & Bald, J[ames] G[rieve]  
 On the use of the primary lesions in quantitative work of two plant viruses. *Ann. Appl. Biol.* **20**(1) : 70-99, 1933.

The authors used the method devised by Holmes. They say, "Tomato spotted wilt forms necrotic primary lesions on the leaves of tobacco of a character suitable for quantitative work, and a number of the results obtained with tobacco mosaic have been checked with this virus." They discuss the method and results.

-----, & -----  
 Tomato spotted wilt of tomatoes. *Journ. Dept. Agric. South Australia* **37**(2) : 190-195, 1933.

A brief article, well illustrated describing South Australia tomato spotted wilt which is transmitted by *Frankliniella insularis* and *Thrips tabaci*. Control measures are recommended.

-----, & Eardley, C. M.  
 "Big bud" a virus disease of the tomato. *Phytopathology* **23**  
 (8) : 641-653, 1933.

This disease was originally named "tomato rosette" by Cobb. The authors describe the abnormalities produced by the disease in tomatoes and state that it was not possible to transmit it by mechanical inoculation, but readily by budding and grafting. The shortest incubation period being 28 days. The insect vectors of the disease have not yet been discovered. It was found that *Solanum nigrum* showed similar symptoms to those of diseased tomato plants, but it was not possible to transmit it to tobacco or *Nicotiana glutinosa*.

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 The movement of tobacco mosaic virus within the plant. *Ann. Appl. Biol.* **21**(1) : 90-111, 1934.

A well illustrated work based on Holmes' studies on the subject.

**Sandsten, E[mil] P[eter], & Tompkins C[hristian Milton]**

Degeneration in Colorado potatoes. Colorado Agric. Expt. Sta. Bull. **278**: 3-15, 1922.

A popular discussion of losses.

**Sartory, Gratiot, & Thiéban.**

Sur le rajeunissement de la pomme de terre. (On the rejuvenence of the potato.) Comptes Rendus Acad. Sci. **158**: 45, 1914.

**Sastri, B. N., Sreenivasaya, M., & Iyengar, J. V. V.**

Contributions to the study of spike disease of sandal. (*Santalum album* Linn.) VII.—Factor influencing diastatic activity. VIII.—Chemical composition tissue fluids from the leaf. IX.—Chemical composition of tissue fluids from the stem. X.—Seasonal studies on healthy and partially spiked trees. Journ. Indian Inst. Sci. **12A**(17): 233-250, 295-305. 1929.

The diseased plants have a higher diastatic activity than the healthy plants.

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Note on the starch-liquefying action of Sandal leaf extracts. Indian Inst. Sci. **12A**: 251-252, 1929. (Rev. Appl. Mycol. **9**: 277, 1930.)

The studies on the spike disease suggested that the accumulation of starch in the leaves was caused by failure to liquefy. Studies on hydrolysis of potato starch by extracts from healthy and diseased leaves showed that more starch liquefied in the healthy than in the diseased leaves.

-----, & Narayana, M.

The spike disease of *Dodonaea viscosa*. Journ. Inst. Indian Sci. **13A**(12): 147-152, 1931.

Results are given and discussed as to the constituents of healthy and diseased plants.

**Saunders, A[braham] R[amie]**

Some aspects of the virus disease problem in plants. South African Journal Sci. **23**: 295-304, 1926.

**Sauri, F.**

El mosaico de la caña de azúcar. (Sugar cane mosaic.) Rev. Agric. Rep. Dominicana. **18**(6): 101-104, 1923.

Popular.

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Durch welche Mitted treten wir der Blattrollkrankheit und ähnlichen Kartoffelkrankheiten entgegen? (Through which

means do we treat against leafroll and similar diseases?)  
Fühlings Landw. Zeitg. 1916.

**Savastano, Giulio**

Il mosaico del Fagiolo in Italia. (Bean mosaic in Italy.) Boll.  
R. Staz. Pat. Veg. n. s. **12**(4): 377-394, 1932.

The author accounts for the symptoms, distribution, probable nature,  
and types of bean mosaic. Gives methods of control.

**Sayer, Wynne.**

Mosaic and its control in other cane growing countries. Agric.  
Journ. of India. **24**(1): 25-31, 1929. (Facts About Sugar 24:  
371, 1929. Rev. Appl. Mycol. 8: 404, 1929.)

An exposition of data and facts for every country.

**Schaffnit, J[ohannes Martin] E[rnst Christian Otto]**

Zur erforschung der Mosaikkrankheiten. (Investigation of mo-  
saic disease.) Angew. Botanik. **8**(5): 304-313, 1926.

The author gives a general discussion and expresses the opinion that  
the "running out" of potatoes is due to environment and not to virus  
diseases.

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Panaschierung und Mosaikkrankheit. (Variegation and the mo-  
saic disease.) Forsch. Gebiet Pflanzenkr. u. Immunitat in  
Pflanzenreich **1**(4): 16-22, 1927.

The author criticizes the classification of Küster and Sorauer. He  
claims that variegations are transmitted through the germ plasm;  
that mosaic diseases have symptoms other than mottling.

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**., & Weber, H[ermann]**

Über das Vorkommen von intrazellularen Körpern in den Gewe-  
ben mosaikkranker Rüben. (Occurrence of intracellular bodies  
in the tissues of mosaic-diseased beets.) Forsch. Gebiet Pflan-  
zenkr. u. Immunitat Pflanze. **1**(4): 23-42, 1927.

The author describes intracellular bodies found in the phloem of mo-  
saic beets. These bodies were not found in healthy beets.

-----  
Ueber die wechselseitige ueber tragbarkeit des Mosaikkrankheit  
von Rübe und Spinat. (On the intertransmissibility of the  
mosaic, disease of beet and spinach.) Centrabl. Für Bakt. Abt.  
**II**, **71**: 490-497, 1927. (Rev. Appl. Mycol. 7: 136, 1927.)

The disease of these two plants are the same or closely related.  
They are transmitted by *Aphis fabae* (*A. rumicis*) and *Macrosiphum*.

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Der gegenwertige Stand der Forschung über Viruskrankheit.  
(Present status of research on virus diseases.) Beiträge z.  
Pflanzenzucht. **9**: 25-41, 1927, (Pflanzenbau **4**: 9-10, 1927-28.)

-----, & Lüdtkke, M.

Untersuchungen über Viruskrankheiten. 9. Beiträge zur Kenntnis des stoffwechsels mosaikkranker und gesunder Tabakpflanzen. (Investigations about the virus diseases. 9. Contribution to the study of assimilation in mosaic diseased and healthy tobacco plants.) *Phytopath. Zeitschr.* **2**: 341-359, 1930.

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On the differentiation and transmission of virus diseases of the *Solanaceae* and the dependence of their occurrence and spread on the nutrition of the plants. Fifth Intern. Bot. Congr. Cambridge 1930: 380-382, 1930.

-----, & Muller, W.

Untersuchungen über Viruskrankheit (10 Mitteilung). Wechselseitige Virusübertragungen innerhalb der Familie der Solanaceen. (Investigations on virus diseases (Note 10). Reciprocal virus transmission within the family of the Solanaceae.) *Phytopath. Zeitschr.* **3**(2): 105-136, 1931.

A very extensive and detailed discussion on the subject.

-----, & Johnssen, A.

Untersuchungen über Viruskrankheiten (II Mitteilung). Beiträge zur Kenntnis der Blattrollkrankheit der Kartoffel. (Studies on virus diseases. (Note II). Contributions to the knowledge of the potato leaf-roll disease.) *Phytopath. Zeitschr.* **5**(6): 603-612, 1933.

The author describes the successful results obtained in his experiments in the transmission of leaf roll disease by means of the aphids *Myzus persicae* and by grafting.

**Schander, R[ichard]**

(Potato diseases.) *Fuhling's Landw. Ztg.* **58**(8): 273-285, 1909.

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(New studies on the leaf-roll disease of the potato.) *Jahresber. ver. Angew. Bot.* **7**: 235-245, 1909.

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(The leaf-roll disease of the potato.) *Ber. West Preuss. Bot. Zool. ver.* **32**: 70-72, 1910.

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(Leaf-roll of potatoes and related diseases.) *Fuhling's Landw. Ztg.* **63**(7): 225-243, 1914.

-----, & Tiesenhausen, M[anfred]

Kann man die Phloemnecrose als Ursache oder Symptom der Blattroll Krankheit der Kartoffel ansehen. (Phloem necrosis



as cause or symptom of leaf-roll of potato.) Mitt Kaiser Wilhelms Inst. Landw. Bromberg 6(2) : 115-124, 1914.

-----, & Richter, K[arl]

Untersuchungen über das Verhältnis der keimfähigkeit der Kartoffelknollen zum Gesundheitszustand und Ertrag. (Investigations on the relations of the germination activity of potato tubers to healthiness and yield.) Centralbl. für Bakt., Abt. 2, 60(1-6) : 27-80, 1923.

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Zur Mosaikkrankheit der Kartoffel. (Mosaic disease of potato.) D. Kartoffel 5 : 212-213, 1925.

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Neuere Arbeiten über die Blattrollkrankheit. (New work on the potato leaf-roll.) Mitt. der D. L. G. 42(23) : 613-615, 1927.

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Physiologische Untersuchungen an Blattrollkrankheiten Kartoffel. (Physiological investigation on potato leaf-roll disease.) Landw. Versuchs-Stationen 55(3-4) : 198-204, 1927.

-----, & Bielert

Nekrose und andere Degenerationerscheinungen im Phloem der Kartoffelpflanzen. (Necrosis and other degeneration phenomena in the phloem of potato plants.) Arb. Biol. Reichsanst. Land u. Fortwirtsch. 15(5) : 609-672, 1928.

The author discusses necrosis which is a pathological condition; and neurobiosis and obliteration which are due to old age.

**Schek, A.**

Ueber de Kräuselkheit der Kartoffeln. (On the curl disease of potatoes.) D. Landw. Presse 2 : 666, 1875.

Historical.

**Scherffius, W[illiam] H[enry]**

Tobacco mosaic. Some interesting experiments on a supposed disease in Turkish tobacco. Journ. Dept. Agric. South Africa, 8(1) : 33-34, 1924.

The author claims that certain green splotches in cured tobacco are not caused primarily by mosaic.

**Schertz, F[rank] M[ilton]**

A chemical and physiological study of mottling of leaves. Bot. Gaz. 71 : 81-130, 1921.

This is not a study on virus diseases, but is of interest to students of the subject.

**Schewe, O.**

Der einfluss der kalidüngung auf die Blattrollkrankheit der kartoffel. (The influence of potash fertilization on the leaf-roll disease of potato.) Ernähr. d. Pflanze **19**:121-122, 1923.

**Schleh**

Ein Beitrag zur Kenntnis der Blattrollkrankheit der Kartoffeln (A contribution to the study of the leaf roll disease of potatoes.) Fühlings Land. Zeit. **58**:641-663, 1909.

**Schlumger, O[tto]**

Beobachtungen und Erfahrungen über den Gesundheitszustand der Kartoffel in Fahre 1930. (Observations and experiences in connection with the state of health of potatoes in the year 1930.) Pflanzenbau **7**(4):118-119, 1930.

Roguing is recommended by the author to prevent spread of mosaic in the field from plant to plant.

**Schmid, A.**

Zur Vererbung der Blattrollkrankheit der kartoffel. (Inheritance of leaf-roll disease of potatoes.) Illus. Landw. Ztg., **31** (17):160, 1911. (Abs. Centbl. Bat. Abt. **31**:331-332, 1911.)

**Schmidt, A.**

Die Kräuselkrankheit der Pelargonien. (The curl disease of Pelargonium.) Gärtner-Börse **13**:1-308, 1931.

**Schmidt, E[rnst] W[illy]**

(A discussion of the leaf-roll disease of the potato.) Dent. Landw. Presse. **36**(99):1051, 1909.

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Zur Mosaikkrankheit der Zuckerrübe. (Mosaic disease of sugar beet.) Ber. Deutsch. Bot. Ges. **45**(9):598-601, 1927.

A discussion of the significance of crystals in the roots of mosaic beets.

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Zur Mosaikkrankheit der Zucker-und Futterrübe. (Mosaic disease of sugar and fodder beets.) Deut. Zuckerrid. **52**:1305-1306, 1927.

The author reports a mosaic disease of sugar beet in Germany.

**Scholz, W.**

Bisherige forschungsergebniß betreffend die chlorose der gelben lupina (*Lupinus luteus*) in ibren beziehung zum eizen. (Vorlanfige voroffenlichung.) (Results so far obtained from researches connected with chlorosis of the yellow Lupin (*Lupinus*

*luteus*) in its relation to iron. (Preliminary publication.)  
Zeitschr. für Pflanzen. Düngung & Bodenkunde. **A. 25**: 287-  
293, 1932.

A summarization of previous work and its announcement of work  
in progress.

### Schribane

Recherches sur l'enroulement de fescilles de la Pomme de terre.  
(Researches on the leaf-roll of potato.) Comptes Rendus  
Acad. Agr. France **5**(10): 356-358, 1919.

### Schribau, Emile

Sur la dégénérescence des pommes de terre. (Potato degenera-  
tion.) Acad. Agr. France Compt. Rend. **8**: 397-398, 1922.

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Sur la dégénérescence de la pomme de terre et sur les moyens de  
la conjurer. (The degeneration of the potato and the means  
of preventing it.) Comp. Rendus. Acad. Agr. de France, **9**  
(3): 95-97, 1923.

### Schultz, E[dwin] W[illiam]

The ultrascopic viruses from the biological standpoint. Sci. Mo.  
**31**: 422-443, Nov. 1930.

A general discussion dealing mostly with virus diseases of animals.

### Schultz, Eugene S[chultz], Folsom, D[onald], Hildebrandt, F[rank] M[errill], & Hawkins, L[on] A[drian]

Investigations on the mosaic disease of the Irish potato. Journ.  
Agr. Res. **17**(6): 247-273, 1919.

This paper gives a discussion of distribution, losses, symptoms and  
methods of transmission. The disease can be transmitted in tubers,  
by grafting and by *Myzus persicae* and *Macrosiphum solanifolii*. The  
leaves from diseased plants contain more sugar and less starch than  
the leaves from healthy plants. Tubers from diseased plants may  
produce plants without symptoms. Hill selection does not give satis-  
factory results. Roguing before the coming of the insect vectors is  
efficient.

-----, & -----

Transmission of the mosaic disease of Irish potatoes. Journ.  
Agr. Res. **19**(7): 315-338, 1920.

Gives results of experiments showing that the disease can be trans-  
mitted by tubers, grafting, plant juice and aphids.

-----  
A transmissible mosaic disease of Chinese cabbage, mustard and  
turnips. Journ. of Agric. Res. **22**(3): 173-179, 1921.

Symptoms and transmission experiments.

-----, & **Folsom D[onald]**

Leaf-roll, net-necrosis, and spindling-sprout of the Irish potato.  
Journ. Agr. Res. **21**(1) : 47-80, 1921.

Gives the results of studies, mostly on transmission which is by aphids.

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Transmission of potato streak. *Phytopathology* (Abstract) **12**  
(1) : 41, 1922.

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A spindling-tuber disease of Irish potatoes. *Science* n. s. **57** :  
149, 1923.

Proofs by transmission that this is a virus disease.

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"Spindling" tuber and other degeneration diseases of Irish po-  
tatoes. *Phytopathology* (Abstract) **13**(1) : 40, 1923.

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Transmission, variation and control of certain degeneration dis-  
eases of Irish potatoes. *Journ. Agr. Res.* **25**(2) : 43-118, 1923.

Gives the results of extensive studies of the virus diseases of po-  
tatoes with special attention to their transmission from diseased to  
healthy plants and methods of control.

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Why potatoes run out. *U. S. D. Agr. Farmers' Bull.* **1436**, 21  
p., 1924.

A popular discussion.

-----, & **Folsom, Donald**

Infection and dissemination experiments with degeneration dis-  
eases of potatoes. Observations in 1923. *Journ. Agr. Res.*  
**30**(6) : 493-528, 1925.

A description of symptoms including second generation reactions.  
Also extensive experiments on methods of transmission.

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A potato necrosis resulting from cross-inoculation between ap-  
parently healthy potato plants. *Science* n. s. **62**(1616) : 571-  
572, 1925.

The content of this paper is indicated by the title. The author  
thinks that the apparently healthy potatoes may have been symptom-  
less carriers.

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Potato diseases. *Potato Assoc. Amer. Proc.* **15** : 293-296, 1928.  
Popular.

-----, & **Bonde, Reiner**

Apical leaf-roll of potato. *Phytopathology* (Abstract) **19**(1): 82, 83, 1929.

-----, & **Folsom, Donald**

Recent potato virus-disease information contributing to the production of better seed potatoes. *Proc. Ann. Meeting Potato Assoc. Amer.* **15**:203-226, 1929. (Maine Agric. Expt. Sta. Bull. **353**:147, 1929.)

A popular discussion.

-----  
Potato virus diseases. *Proc. Ann. Meeting Potato Assoc. Amer.* **15**:293-295, 1929.

A popular discussion.

-----, & **Raleigh, W[alter] P.**

Resistance of potato to latent mosaic. *Phytopathology* (Abstract) **23**(1):32, 1933.

Report of results obtained with inoculations of latent mosaic which is generally present in a masked form in Green Mountain and other potato varieties.

-----, & -----

New necrotic virus disease of potatoes. *Phytopathology* (Abstract) **23**(1):32, 1933.

Comparisons of this new virus disease with other types. Transferable to tomato, tobacco and *Datura stramonium*.

-----, **Bonde, Reiner, & Raleigh, W. P.**

Components of potato mild mosaic. *Phytopathology* (Abstract) **24**(1):17, 1934.

-----, **Clark, C. F., Bonde, Reiner, Raleigh, W. P., & Stevenson, F. J.**

Resistance of potato to mosaic and other virus diseases. *Phytopathology* **24**(2):116-132, 1934.

A thorough account of the authors based on experimental observations on varietal resistance.

**Schultz, G.**

Entartung der Magnum bonum-Kartoffel? *Deut. Landw. Presse* **32**:872-875, 1905.

**Schwartz, M[arie] B[eatrice]**

Enige ziekten van onbekenden sard bij groenhemesters. (English Summary.) *Inst. Plantenziekten. Korte. Meded.* **5**, 19 p., 1927.

**Schwarze, Carl Aloise**

Relation of the mosaic of the pepper and the filiform leaf of the tomato to the mosaic of the tobacco. *Phytopathology* (Abstract) **4**(1): 42, 1914.

**Schweiner, J.**

Over virusziekten bij tabak. (On the virus diseases of tobacco.) Verlag Negende Vergadering V.V.P.P. p. 81, 1928.

**Schweizer, G[eorge]**

Zur Blattrollkrankheit der Kartoffelpflanze. (Leaf-roll disease of the potato plant.) *Ber. Deutsch. Bot. Ges.* **44**(9): 551-561, 1926.

Physiological and chemical studies which show that there was more diastase in diseased than in healthy plants.

-----  
Ein Beitrag zur Aetiologie und Therapie der Blattrollkrankheit bei der kartoffelplanze. (A contribution to the etiology and cure of the leaf-roll disease of the potato plant. *Phytopath. Zeitschr.* **2**(6): 557-591, 1930.

An extensive discussion on the etiology studies made by the author, giving as a promising control method, the application to the soil of a mixture of manganese, lime, cyamide and uranium salts.

**Schwing, E[dward] A., & Hartung W[illiam] J[ohn]**

Utilization of systematic observations on beet leafhopper (*Eutettix tenella* Baker) and curly leaf of sugar beet. *Journ. Econ. Ent.* **15**(5): 365-368, 1922.

-----  
Notes on *Eutettix tenella* (Baker) in Northern California. *Journ. Econ. Ent.* **20**: 645-646, 1927.

A record of the overwintering of the insect.

-----  
Experiments on control of *Eutettix tenellus* (Baker). *Journ. Econ. Ent.* **27**: 790-791, 1928.

A brief paper giving methods and results.

**Sein, Jr., F[rancisco]**

Sugar-cane mosaic and other grasses. *Ins. Expt. Sta. Report of the Div. of Entomology, Puerto Rico, Rpt.* **1923-24**: 114, 1924.

Report of experiments in progress in relation to mosaic transmission using different aphid species.

-----  
A new mechanical method for artificially transmitting sugar-cane mosaic. *Journ. Dept. Agric. Puerto Rico* **14**(2): 49-68, 1930.

The author describes a new method in which he uses very fine insect pins. The spindle of a diseased plant is removed and placed in close contact with the spindle of a healthy plant. The pins are pushed through the diseased and into the healthy plant. The author reports a high percentage of infection.

-----  
Artificial transmission and other studies on sugar-cane mosaic. Fourth Cong. Internat. Soc. Sugar-Cane Technologists, Puerto Rico, 1932, Bull. **84**, 6 p., 1933.

The author discusses the subject under widely different points of view. Some of them towards the nature of the virus and others dealing with its mechanical and insect transmission. *Aphis maidis* is conclusively a carrier of the disease; *Sipha flava* Forbes is not.

**Selby, A[ugustine] D[awson]**

Peach yellows, black rot and San José scale. Ohio Expt. Sta. Bull. **72**:193-220, 1896.

A brief discussion of symptoms, cause, spread and treatment.

-----  
Investigations of plant disease in the forcing house and garden. Ohio Agric. Expt. Sta. Bull. **73**:221-246, 1896.

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Preliminary report on diseases of the peach. 1.—peach yellows. Ohio Agric. Expt. Sta. Bull. **92**:190-199, 1898.

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Report of committee on vegetable pathology. A peculiar malady of forced cucumbers. Ohio State Hort. Soc. Ann. Rept. **1902**:109, 1903.

Popular. Early record.

-----  
Tobacco diseases and tobacco breeding. Ohio Agric. Expt. Sta. Bull. **156**:88-94, 1904.

Describes diseases and reviews work of others. Proves transmission by touching diseased and then healthy plants. Gives percentages of transmission by this method. Not transmitted by the seed.

-----  
Mosaic disease of cucumber. Ohio Agric. Expt. Sta. Bull. **214**:394, 1910.

Early record of this disease. The author believes it was due to an oxidizing ferment in the leaves. Compares it with tobacco mosaic and peach yellows.

**Semple, D[avid] M[c Hardy]**

Mosaic diseases cause heavy losses. Sugar Centr. & Planters' News, Philippines. **4**:140, 1923.

Popular. Estimation of losses.

**Serrano, F[elicisimo] B.**

Banana diseases in the Philippines. Bureau of Agric. Philippine Is. Circ. **176**, 1925. (Philippine Agric. Rev. **18**(4): 578-582, 1925.)

Brief discussion of bunchy top disease on page 58.

**Soubert, Elisabeth**

Über Keimschadigungen der Erstling durch Virus-Netnekrose. D. Kartoffel **7**: 131-132, 1927.

**Severin, H[enry] H[erman] P[aul]**

Investigations of the beet leafhopper *Eutettix tenella* (Baker). Journ. Econ. Ent. **12**: 312-326, 1919.

The author discusses the hibernation of the insect and the plants from which it carries the curly top to the beets. Gives the results of experiments with the insect and list of host plants for the virus.

-----  
The beet leaf-hopper. A report on investigations into its occurrence in California. Facts About Sugar **8**(7): 130, 131, 134. (8): 150, 151. (9): 170, 171, 173. (10): 190, 191. (11): 210, 211. (12): 230, 231. (13): 250, 255, 1919.

-----  
Minimum incubation periods of causative agent of curly-leaf in beet leaf-hopper and sugar-beet. Phytopathology **11**(10): 424-429, 1921.

-----  
Experiment with a dusting machine to control the beet leaf-hopper *Eutettix tenella* (Baker) with nicotine dust. Journ. Econ. Ent. **14**: 405-410, 1921.

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Practical use of curly leaf symptoms. Facts About Sugar **12**: 170-173, 212-214, 217, 1921.  
Popular.

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Minimum incubation period of causative agent of curly leaf in beet leaf hopper (*Eutettix tenella*, Baker) and sugar beet. Phytopathology (Abstract) **12**: 105, 1922.

-----  
Curly-top transmission experiments with beet leaf-hopper. Journ. Econ. Ent. **15**: 182, 1922.

The author gives evidence that incubation of the active agent is necessary. He says—"The minimum incubation period of the infective principle of curly leaf in the beet leafhopper required four hours at the following temperatures: maximum 103° F.; minimum



94° F. and mean 100° F. and three days in the sugar beet at the following temperatures: maximum 100° F., minimum 57.7° and mean 80.3° F.''

-----, & Basinger, A. J.

Facts concerning migration of beet leaf-hopper *Eutettix tenella* (Baker) in Sacramento Valley of California. Journ. Econ. Ent. 15: 404-411, 1922.

This paper is important because the insect is the carrier of the virus of the curly top of the sugar beet.

-----  
Facts concerning natural breeding area of beet leaf-hopper *Eutettix tenella* (Baker) in San Joaquin Valley of California. Journ. Econ. Ent. 15: 411-420, 1922.

This paper is important because the insect is the carrier of the curly-top of the sugar beet.

-----  
Control of the Leaf-hopper. Facts About Sugar 14: 312-313, 332-333, 1922.

The author gives suggestions for the control of the insects.

-----  
The life history of the beet leafhopper. Facts About Sugar 14: 92-93, 119-121, 130-131, 152-154, 158, 170-171, 1922.

Life history.

-----  
Control of the beet leafhopper. Facts About Sugar 15: 134-135, 137. 1922.

The insects were checked by dusting with nicotine compounds and the amount of curly top reduced.

-----, Hartung, W[illiam] J[ohn], Schwing E[dward], A., & Thomas, W[illiam W.]

Investigations of beet leafhopper *Eutettix tenella* (Baker) in Salinas Valley of California. Journ. Econ. Ent. 16(6): 479-485, 1923.

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Incubation period. California Agric. Expt. Sta. Ann. Rept. 1922-23: 127, 1923.

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Curly leaf transmission experiments. Phytopathology (Abstract) 14(2): 123, 1924.

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Curly leaf transmission experiments. Phytopathology 14(2): 80-93, 1924.

A small amount of injections resulted from putting small drops of juice on leaves. The disease is carried by leaf hoppers. The active agent travels about 7 inches in about 30 minutes at a temperature of 103.5 degrees F.

Causes of fluctuation in number of beet leafhoppers *Eutettix tenella* (Baker) in a natural breeding area of the San Joaquín Valley in California. Journ. Econ. Ent. 17: 639-645, 1924.

This paper is important because the insect is the carrier\* of the virus causing the curly top of the sugar beet.

A natural breeding area of the beet leaf hopper (*Eutettix tenella*, Baker.) in the Sierra Nevada mountains. Journal Econ. Ent. 18(5): 730-733, 1925.

Percentage of curly-top infection in beet leafhopper *Eutettix tenella* (Baker) and winter host plants under field conditions. Journ. Econ. Ent. 18(5): 733-737, 1925.

A record which is of importance in connection with the study of the curly top of sugar beets.

The 1925 outbreak of the beet leafhopper *Eutettix tenella* (Baker) in California. Journ. Econ. Ent. 19: 478-483, 1926.

Crops naturally infected with sugar beet curly-top. Science n. s. 66(1701): 137-138, 1927.

This is a brief paper giving a list of crops naturally infected with the curly top.

Notes on curly-top. Facts About Sugar. 22(35): 844, 1927.

As a result of inoculation experiments the author gives a lengthy list of susceptible plants.

., & Severin, Harry C[harles]

Curly-top of sugar beets in South Dakota. Journ. Econ. Ent. 20(4): 586-588, 1927.

A report of the occurrence of the disease at this place. The insect vectors could not be found.

., & Henderson, C[harles] F.

Beet leafhopper *Eutettix Tenellus* (Baker) does not occur in the Argentine Republic. Journ. Econ. Ent. 21: 542-544, 1928.

A history of the records and claims.

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Some host plants of curly-top. *Hilgardia* **3**(13): 339-392, 1928.

The authors discuss the flights of the leaf hoppers, give symptoms and valuable lists of host plants.

-----, & Swezy, Olive

Filtration experiments on curly top of sugar beets. *Phytopathology* **18**(8): 681-690, 1928.

The author gives the results of feeding the leafhopper on filtered virus. These insects were able to transmit the disease but the juice became inactive on exposure to air.

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Transmission of tomato yellows, or curly top of the sugar beet by *Eutettix tenellus* (Baker) *Hilgardia* **3**(10): 251-274, 1928. (*Phytopathology* **18**: 709-710, 1928.)

The author discusses the nature of the injury, symptomatology, life history of the insect carrier, inoculation experiments and some economic features of the disease.

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Curly top symptoms on the sugar beet. *California Agric. Expt. Sta. Bull.* **465**, 35 p., 1929.

A very thorough and well illustrated paper on symptoms.

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Yellows disease of celery, lettuce, and other plants transmitted by *Cicadula sexnotata* (Fall). *Hilgardia* **3**(18): 543-582, 1929.

The disease is transmitted by *Cicadula sexnotata* (Fall). It is identical with aster yellows and with lettuce yellows. The disease also attacks several other plants.

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Additional host plants of curly top. *Hilgardia* **3**(20): 595-636, 1929.

The author gives records concerning newly discovered carriers of the virus of curly top.

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Carrot and parsley yellows transmitted by the six-spotted leafhopper, *Cicadulla sexnotata* (Fall). *Phytopathology* **20**(11): 920-921, 1930.

Parsley and carrots were successfully reciprocally and cross-inoculated.

-----  
Modes of curly top transmission by the beet leaf-hopper, (*Eutettix tenellus* (Baker)). *Hilgardia* **6**(8): 253-276, 1931.

The author gives much valuable data. The disease has been transmitted by 40 insects in as short a time as 20 minutes. The author

gives the results of extensive experimental work on this subject. The percentage of infected plants varied with the time the insects were allowed to feed on the plant and the number of insects used. The author gives tables and an excellent summary of the work.

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Transmission of carrot, parsley and parsnip yellows by *Cicadulla divisa*. Hilgardia 7(3):163-179, 1932

The author gives the symptoms, the disease and the results of experiments. The disease was transmitted back and forth among these three hosts and from the hosts to asters, celery and dock.

-----, & Freitag, Julius H.

Some properties of the curly-top virus. Hilgardia 8(1):1-48, 1933.

Results of studies made by the author in regard to curly-top virus, its properties, nature, inactivation, physical properties and other valuable data.

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Field observations on the beet leafhopper *Eutettix tenellus* (Baker) in California. Hilgardia 7:281-350, 1933.

This paper gives a large amount of data concerning this insect which is the carrier of the curly top of the sugar beet.

-----, & Freitag, Julius H.

List of ornamental flowering plants naturally infected with curly top or yellows diseases in California. U.S.D.A. Plant Disease Reporter 17(1):1-2, 1933.

**Shaposhnikov, J. J.**

(Russian beet variety resistant to curly top.) Sovietskü Sakhar. 1929:570-571, 1929; (Facts About Sugar (Abstracts) 25(9):216, 1930; Rev. Appl. Mycol. 9:425, 1930.)

The seed of variety P-19, which was produced in California was sent to its original home in Ivanovka, Russia. The seed from this crop was returned to California and grown. It was found to be resistant to curly top but the sugar content was less than the checks. The loss in sugar content was compensated by the resistance to the disease.

**Shapovalov, M[ichael]**

Effect of environmental conditions on western yellow blight of tomatoes. Phytopathology (Abstract) 14(2):120, 1924.

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The significance of the 1924 outbreak of western yellow tomato blight in the United States. Phytopathology (Abstract) 15:50, 1925.

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High evaporation: a precursor and a concomitant of western yellow blight. *Phytopathology* **15**:220-278; 470-478, 1925.

A study of the relationship of environmental factors to the development of this disease.

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Ecological aspects of a pathological problem (Western yellow blight of tomatoes.) *Ecology* **6**:241-259, 1925.

-----, & Beecher, F. Sidney  
Menace of western yellow tomato blight. Pacific Rural Press. **111**:365-371, 1926.

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The A.A.A.S. The Reno meeting of the Pacific division 11 American Phytopathological Society. Pacific Division. Science (Abstract) **66**:247, 1927.

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Inoculation experiments with western yellow tomato blight in relation to environmental conditions. *Phytopathology* (Abstract) **17**(10):746, 1927.

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Yellows, a serious disease of tomatoes. U.S.D.A. Misc. Pub. **13**:2-4, 1928.

A brief review of our knowledge of the subject.

-----, & Beecher, F. Sidney  
The development of tomato yellows under different light conditions. *Phytopathology* (Abstract) **18**(11):950, 1928.

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Tuber transmission of psyllid yellows in California. *Phytopathology* (Abstract) **19**(12):1140, 1929.

-----, & Beecher, F. Sidney  
Experiments on the control of tomato yellows. U.S.D.A. Tech. Bull. **189**, 1930.

The virus of this disease is the same as the virus of curly top of sugar beets and is carried by the leafhopper *Eutettix tenellus* Baker. The authors review the subject and give the results of experimental work. The disease is reduced by shading but dusting and spraying for the control of the insects gave encouraging results.

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A celluloid cell for inoculation of plants with insect vectors. *Phytopathology* **20**(8):681-683, 1930.

Illustration and description of this apparatus is of interest to students of inoculation of plant viruses.

-----, & Jones, Henry A.

Changes in the composition of the tomato plant accompanying different stages of yellows. *Plant Physiol.* **5**(1):157-165, 1930.

The authors report the following changes:

- 1.—The increase of dry matter and the accumulation of starch and sugars appeared to be constant and should be regarded as a condition characteristic of this virus disease.
  - 2.—Changes in the amount of nitrogen is variable.
  - 3.—The carbohydrate accumulation in the same plant is progressive.
- Other valuable data is given.

-----, & Lesley, J[ames] W[yvill]

Effect of shading on the rate of development of tomato yellows. *Phytopathology* **21**(1) : 83-87, 1931.

Shading increases the tolerance of the plant to the virus provided that partial protection from beet leafhopper (*Eutettix tenella* Baker) is afforded. If continued after infection a crop is produced and in some cases recovery from the disease occurs.

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The growth rate of tomato plants affected by yellows. *Phytopathology* (Abstract) **21**(1) : 106, 1931.

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Graft transmission of curly top in tomatoes (tomato yellows). *Phytopathology* (Abstract) **21**(10) : 998-999, 1931.

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The dieback form of tomato streak. *Phytopathology* (Abstract) **23**(11) : 928, 1933.

**Shaw, Harry B[erry]**

The curly top of beets. U.S.D.A. Br. Plant. Indus. Bull **181**, 46 p., 1910.

Describes the symptoms and gives the results of experiments to determine the cause. Also discusses the leafhopper *Eutettix tenella* (Baker) in relation to the disease and to some of its other host plants.

**Shear, C[ornelius] L[ott]**

Cranberry diseases in Wisconsin. Wisconsin State Cranberry Growers' Assoc. Ann. Rept. **21**:17-21, 1908.

Early record.

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False blossom of the cultivated cranberry. U.S.D.A. Bull. **444**, 1916.

A general discussion of the disease, the cause of which was unknown at that time.

**Shear, W[illiam] V.**

How certified seed potatoes will benefit the California potato industry. Calif. Dept. of Agric. Monthly Bull. **9**(9):375-391. 1920.

**Sheffield, F[rances] M[arion] L[ena], & Smith, J[ohn] H[enderson]**

Intracellular bodies in plant virus diseases. Nature **125**(3141): 200, 1930.

The authors give the results of their studies on the x-bodies in the living epidermal hairs of *Solanum nodiflorum*.

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The formation of intracellular inclusions in *Solanaceous* hosts infected with aucuba mosaic of tomato. Ann. Appl. Biol. **18**(4): 471-493, 1931.

These bodies were formed by inoculating aucuba mosaic into *Solanum nigrum*, *S. nodiflorum*, *S. Lycopersicum*, *Nicotiana tabacum* and *Hyoscyamus niger*. The author describes the formation of these bodies.

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The development of assimilatory tissue in solanaceous hosts infected with aucuba mosaic of tomato, Ann. App. Biol. **20**(1): 57-69, 1933.

The author describes the development of the chloroplast in *Solanum nodiflorum*, *S. Lycopersicum* and *Nicotiana tabacum* and compares healthy and diseased plants. In plants infected with aucuba mosaic certain of the leaf tissues are devoid of plastids and the cells may be undifferentiated. The absence of chlorophyll is brought about by the inhibition by the virus of the development of the plastid primordia.

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Virus diseases and intracellular inclusion in plants. Nature **131**(3305): 325-326, 1933.

Description of experiments conducted to determine whether reactions in certain *Solanaceae* similar to those induced by inoculation with *aucuba* mosaic of tomato could be stimulated by physico-chemical means. The plants treated were tomato, *Solanum nigrum* and *S. nodiflorum*.

**Shepard, E[dward] F[rederick] S[isnett]**

Les maladies Mosaïques des plantes. (Mosaic disease of plants.) Rev. Agric. Ile Maurice **12**: 332-335, 1923.

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(Summarized report on the position in relation to sugar-cane Mosaic in Reunion.) Rev. Agr. de L'Ile Maurice **13**: 59-61, 1924. (Rev. Appl. Mycol. **4**: 313, 1924 Maurice Dept. Agric. 3 p. 1924.)

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Considerations sur la presence de la mosaïque á la Reunion.  
(Considerations about the presence of mosaic in Reunion.)  
La Rev. Agric. de L'Île Maurice 19:384-389, 1925.

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Mosaic disease serious in Reunion, Is. South African Sugar  
Journ. 9:97, 99, 101, 1925.

The author gives a general discussion of mosaic diseases with special reference to conditions in Reunion Island.

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Les "streak disease" des graminées á Maurice, Is. (The "streak  
disease", of graminæ in Mauritius, Is.) Rev. Agr. Ile Reu-  
nion. 11(3):352-357, 1925. (Rev. Agric. Ile Maurice, 22:  
540-542, 1925.)

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Maize chlorosis. Notes on chlorosis of Maize and other grami-  
næas in Mauritius, Is. Trop. Agric. (Trinidad) 6(11):330,  
1929. (Rev. Applied Mycol. 9:300, 1930.)

A chlorosis of maize at first believed to be mosaic is now believed to be streak.

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Mycological Division, Maurice Is. Dept. Agric. An. Rpt. 1928:  
8-11, 1931.

Streak on maize and mosaic *Physalis peruviana*, cucurbits and *Brassica sinensis* is reported.

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Diseases of sugar cane in Mauritius. Mauritius Dept. Agric.  
Bull. 41, Gen. Ser. 27 p., 1931.

A popular publication on diseases of sugar cane, containing some data on mosaic.

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**Shevchenko, I. S.**

(Report on the mosaic-disease of the sugar beet at the phyto-  
pathological section of the kharkov Regional Agricultural  
Experiment Station for 1928-29.) In V. P. Muraviov. Mo-  
zaichnye Bolezni Sakharnoi Svekly (Mosaic diseases of sugar  
beet Kiev, S.S.U. Soiuzsakhara p. 67-98, 1930. (English Abs-  
tract p. 97-98.)

Continuation of Proida's work, during 1928-29. Studies on trans-  
mission were undertaken. It was found that mosaic produces 1.1 per  
cent decrease in sugar content of the beet as maximum and 0.75 per  
cent as average and 12.9 per cent on beet seed output. No variety  
proves to be immune. It was found that the distance from the main  
source of infection is a factor as well as surface relief, wind direction  
and velocity.



**Shevchenko, L. M.**

(The development of mosaic on the sugar beet in relation to the date of sowing.) In V. P. Muraviiov, *Mozaichnye. Boloezni Sakharnoi Svekly* (Mosaic diseases of sugar beet) Kiev. S.S.U. Soiuzsakhara p. 167-176, 1930. (English Abstract p. 175-176.)

Comparable data of 1927 and 1928 sugar-beet crops. The second year crop showed decidedly more infection than the previous year.

**Shevchenko, V. I.**

(Injury which the mosaic produces on the sugar beet.) In V. P. Muraviiov., *Mozaichnye Bolezni Sakharnoi Svekly* (Mosaic diseases of sugar beet). Kiev, S.S.U. Soiuzsakhara p. 161-166, 1930. (English abstract p. 166.)

The author states, based on his observations during 1928 that no injury due to mosaic was recorded on beets. Weight of beets and sugar yields were observed and recorded on diseased plants, as well as seed produced.

**Shirreff, John**

On the curl disorder in potato. *Caledonian Hort. Soc. Memoirs* 1: 60-64, 1914.

**Sieg, F. L.**

Die Mosaik-krankheit der Gurken. (The mosaic disease of cucumber.) *Gärtner Borse* 10: 363, 1928.

**Sieger, E.**

Ein Beitrag zur Erforschung der Kartoffelblattrollkrankheit. (A contribution to the investigations of potato leaf roll disease.) *Zeitschr. Spiritusind.* 31: 415, 1908.

**Siemaszko, Wincenty**

Choroby drzew i krzewów owocoroych (Diseases of fruit trees and brush fruit.) *Biblioteka Oytawsja* No. 6. Pulaway, 81, p. 3, 1930.

Supplement to diseases of cultivated plants, gives brief accounts of over 70 virus diseases occurring in Poland.

**Silberschmidt, K[arl]**

Der Einfluss der Mosaikkrankheit auf den Nikotingehalt der Tabakpflanze. (The influence of the mosaic disease on the nicotine content of the tobacco plant.) *Ber. Deutsch. Bot. Gesellsch* 48(1): 122-129, 1930.

The writer gives details of his experiments to determine the relative nicotine contents of healthy and mosaic-diseased tobacco; diseased-

plant leaves showed a higher nicotine content. He suggests that it is due to assimilation of albumen and the formation of nitrate and formaldehyde.

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Studies zum Nachweis von Antikörpern in Pflanzen II. Teil B. (Beiträge zur Frage der Resistenz und Immunität von Pflanzen gegenüber dem in fizierenden Agens der Viruskrankheiten.) C. Studies in the detection of antibodies in plants. II Part B. (Contributions to the problem of resistance and immunity in plants in relation to the infective principle of the virus diseases.) Beitr. Biol. der Pflanzen, **20**(2):105-178, 1932.

A very extensive and comprehensive account of the author's studies on the occurrence of antibodies in tobacco plants conferring immunity from mosaic.

**Simmonds, J[ohn] H[oward]**

Spotted wilt of tomatoes. Queensland Agric. Journ. **28**:28, 1927.

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Bunchy top disease of bananas in Queensland. Queensland Agric. Journ. **30**(4):438-442, 1928. (Trop. Agric. (Ceylon) **72**(3):152-154, 1929.)

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Bunchy top of the banana and its control. Queensland Agric. Journ. **41**(3):241-244, 1934.

Brief article describing the disease, giving points concerning the nature and spread of it, and methods of control.

**Simonetto, M[oisés]**

Plan de investigaciones urgentes sobre las causas concomitantes de la plaga mosaico en la caña de azúcar. (Plan of urgent investigations about the symptomatic causes of the sugar cane mosaic disease.) Rev. Agric. Com. y Trab. Cuba **3**(9):351, 1920.

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Nuevas orientaciones en sanidad vegetal. (New orientations about vegetable sanitation.) Rev. Agric. Com. y Trab. Cuba **3**(9):349-356, 1920.

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Las Rayas Amarillas en la Caña de Azúcar. (Yellow stripes of Sugar Cane.) Cuba Azucarera. Sept. 15, p. 14, 1920.

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La enfermedad de las rayas amarillas en la caña: Su importancia y extensión en Cuba. (The yellow-stripe disease in Cane: Its importance and extension in Cuba.) Oficina de Sanidad Veg., Sec. Agric. Com. y Fábrica de Cuba. Bol. **3**, 63 p., 1921.

The author gives a general discussion with recommendations for control.

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La enfermedad de las rayas amarillas en la caña de azúcar. Réplica al Dr. S. C. Bruner. (The yellow stripe disease of sugar cane. Reply to Dr. S. C. Bruner.) Rev. Agric. Com. y Trab. Cuba **5**(4): 11-13, 44-48, 1922. (Sugar **24**: 641-642, 1922.)

Controversial. A reply to Dr. S. C. Bruner.

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Cómo se debe determinar con buena aproximación el porcentaje de cañas enfermas en un cañaveral infectado con el mosaico. (How to determine approximately the percentage of diseased canes in a cane field infested with the mosaic.) Rev. Agric. Com. y Trab. Cuba **5**(3): 26-27, 1922.

**Simpson, J.**

The potato curl. Gard. Chron. N.S. 4: 143, 1875.

Historical value.

**Sirotina, M. (Mme.)**

(Cytological studies of sugar beet mosaic.) Sugar Ind. Scient. Notes Kieff, Grey ser. **9**(24): 195-216, 1932. (With English summary.)

A rather extensive account of the author's observations from her studies on the subject.

**Skeete, C. C.**

Sugar cane mosaic diseases. Barbados Dept. Agric. Ann. Rpt. **1927-28**: 15-16, 1928.

A brief report.

**Skinner, J[oshua] J[ohn], & Demaree, J[uan] B[rewer]**

Relation of soil conditions and orchard management to the rosette of pecan trees. U.S.D.A. Bull. **1378**, 16 p., 1926.

The increase of organic matter in the soil causes an increase in growth and yield.

**Skoric, V[ladimir]**

Bolestibilja ne fakultetskom dobru "Maksomir" (Plant diseases at the University Farm "Maksimir".) Rapp. Ann. Univ. de Zagreb 1929: 723-746, 1930.

Bean and potato mosaic.

**Slosson, Edwin E[mery]**

Starting a new disease of the class called mosaic disease. Sci. Monthly 20: 331-333, 1925. (Lit. Digest 85: 24, 1925.)

Popular.

**Small, W[illiam]**

Bunchy-top disease of plantains in Ceylon. Trop. Agric. (Ceylon) 71(5): 141-147, 1928.

The author doubts that this disease is due to a virus. He says that there is some evidence that it is caused by a fungus *Rhizoctonia Bataticola*.

**Smith, A. C.**

Virginia mountain grown seed potato demonstrations (Mosaic). Proc. Amer. Soc. Hort. Sci. p. 168-173, 1925.

**Smith, A. J. M.**

Bitter pit in Apples. A review of the problem. Dept. Sci. & Indus. Res. Food Invest. Bd. Special Rpt. 28, 24 p., 1926.

Brief description of the characteristic symptoms, a critical review in some details of the theories on this disease, he admits the disease to be functional and not parasitic. This paper was written before the cause was known.

**Smith, C[harles] E[gan]**

Report on peach yellows. U.S.D.A. Comm. p. 393-398, 1889.

Notes on the Michigan diseases known as "little peach". Fennville Herald (Michigan) Oct. 15, 1898.

Transmission of cowpea mosaic by the bean leafbeetle. Science. 60(1551): 268, 1924.

Evidence indicates that the cowpea mosaic may be carried by the bean leaf-beetle *Ceratoma trifurcata* Forst.

**Smith, Erwin F[rink]**

Peach yellow. A preliminary report. U.S.D.A. Div. of Bot. Bull. 9, 254 p. 1888.

A very extensive publication giving the history of the disease, geographical distribution, characteristics, losses, relationships to climate and soils, methods of transmission and legislation.

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Additional evidence of peach yellows and peach rosette. U.S.D.A. Div. Veg. Path. Bull. 1, 65 p., 1891.

Describes these two diseases and gives the results of extensive experiments.

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The chemistry of peach yellow I & II. Proc. Ouner Pomol. Soc. 1889, 1891.

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The peach rosette. Journ. Mycol. 6(4):143-148, 1891.

The disease is described. The author states that the beetles *Scolytus regulosus* does not transmit the disease. He also states that he observed the disease in cultivated plums and hard-shell almonds.

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Peach yellows. Proc. Penninsular Hort. Soc. Jan. 22, 1891.

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Experiments with fertilizer for the prevention and cure of Peach Yellows. U.S.D.A. Div. of Veg. Path. Bull. 4, 187 p. 1893.

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Additional notes on peach rosette. Journ. Mycology 7:226-232, 1893.

Additional data to that given in bulletin 1, Div. Veg. Pathology, U. S. Dept. Agric. p. 189. The disease was transmitted by budding. No organism has been found.

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Peach yellows and peach rosette. U.S.D.A. Farmers' Bull. 17, 20 p., 1894.

A popular discussion of the subject.

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Notes on the Michigan disease known as "little peach," an address before the Saugatuck and Ganges pomological Society. 12 p. Reprinted from Fenville (Mich.) Herald, Oct. 15, 1898.

Popular.

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Communicability of peach yellows and little peaches. U.S.D.A. Div of Veg. Path. 1:45-58, 1901.

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The sereh disease of sugar cane. Bacteria in Relation to Plant Diseases 3:72-80, 1914.

The author treats the disease from the standpoint of bacteriology.

**Smith, F. E. V.**

Report of the Government Microbiologist. Ann. Rpt. Dept. of Agric. Jamaica 1927:18, 19, 1928. (Rev. Appl. Mycol. 7: 492, 1928.)

**Smith, F[anny] F[ern]**

Some cytological and physiological studies of mosaic diseases and leaf variations. Ann. Missouri Bot. Gard. 13(4):425-484, 1926.

The author reviews the literature, gives the results of experiments with light, the effects of chemicals on the inclusions, histological studies and variations in other plants.

**Smith, Floyd, T[ranking]**

The relation of insects to the transmission of raspberry leaf curl. Journ. Econ. Ent. 18(3):509-513, 1925.

The author reports the *Aphis rubiphila* as the carrier of raspberry leaf curl.

**Smith, J[ohn] Henderson**

Recent work on virus diseases in plants. Proc. Roy. Soc. Med. 20:11-18, 1927. (Rev. Appl. Mycol. (Abstract) 6:501, 1927.)

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Experiments with a mosaic disease of tomato. Ann. Appl. Biol. 15(2):155-167, 1928.

A description and properties of a disease which is probably the same as Johnson's tobacco virus 6.

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The transmission of potato mosaic to tomato. Ann. Appl. Biol. 15(4):517-528, 1928.

This paper gives the results of transmission by mutilation of the foliage.

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Virus diseases in plants. Translocation within the plant. II. The amoeboid intracellular inclusions. Biol. Rev. & Biol. Proc. Cambridge Phil. Soc. 5(2):159-170, 1930.

The author states that we have little knowledge as to the mechanical routes for the spread of the virus. It probably travels from cell to cell and into the water stream but mainly by the phloem. The author gives a full description of the x-bodies which he believes are "a reaction product of the cell to the virus irritant."

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Intracellular inclusion in mosaic of *Solanum nodiflorum*. Ann. Appl. Biol. 17(2):213-222, 1930.

The author gives the results of inoculating *Solanum nodiflorum* with the virus of yellow (aucuba) mosaic of tomato. Two types of bodies were studied in the living cells, crystalline spikes and amoeboid bodies. The latter corresponds to the x-bodies described by many students. The author describes them in detail and says no evidence in these investigations proves them to be organisms.

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The differentiation and classification of plant viruses. Rpt. Proc. 5th, Inter. Bot. Congr. Cambridge p. 373-374, 1930.

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Virus diseases of plants. In: System of Bact. i. Relat. Medic. London, Vol. 7: 42-53, 1930.

A brief review of this subject.

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Rothamsted Experiment Station Report for 1931: 1-199, 1932.  
Studies on certain particles found associated with virus diseases.

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Some aspects of virus diseases in plants. Empire Journ. Expt. Agric. 1(3): 206-214, 1933.

A critical review of our present knowledge of this group of diseases. In conclusion he states: "Although much yet remains to be done both from fundamental and practical aspects, the virus problem is far from being a hopeless tangle."

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Streak in tomatoes aseptically grown. Ann. Appl. Biol. 20 (1): 117-122, 1933.

Two types of bacteria are found in tomato and tobacco plants with streak disease. Experimental work does not show any relationship to the disease.

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**Smith, Kenneth M[anley]**

Mosaic disease of plants. Nature 110: 668, 1922.

A record of the finding of intra-cellular bodies in tissue of potato plants.

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Some peculiar pathological conditions in the leaves of potatoes affected with mosaic diseases. Rept. Int. Conf. Phytopath. & Econ. Ent. Holland, p. 30. H. Veenman & Sons. Wageningen, 1923.

This paper gives the results of cytological studies on vacuolate bodies and nucleolar extensions in cells from chlorotic areas.

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On a curious effect of mosaic disease upon the cells of the potato leaf. *Ann. Bot.* **38**(150): 385-338, 1924.

A record of amoeba-like bodies closely associated with the nuclei.

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A comparative study of the feeding methods of certain Hemiptera and the resulting effect on the plant tissue, with special reference to the potato plant. *Ann. Appl. Biol.* **13**(1): 109-138, 1926.

A very interesting discussion, is included, of the relations of the facts elucidated in the study to the question of the transmission of the virus diseases of the potato by sucking insects.

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Observations on some insect carriers of potato virus diseases. *Mem. & Proc. Manchester Lit. & Philos. Soc. (Abstract)* **71**: 9-10, 1927.

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Observations on the insect carriers of mosaic disease of the potato. *Ann. Appl. Biol.* **14**(1): 113-131, 1927.

A record of preliminary experiments with insect vectors and a list of insects that gave positive results.

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A study of the feeding methods of certain sucking insects in relation to the spread of virus diseases of the potato by such insects. *Mem. & Proc. Manchester Lit. & Philos. Soc. (Abstract)* **70**: 11-12, 1927.

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Insects and potato virus diseases. *Nature.* **121**(3058): 904, 1928.

The author passes the virus from a mosaic potato through tobacco and back to potato and produced intensified symptoms. The original virus could not be transmitted by *Myzus persicae* but modified virus was transmitted.

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Insects in relation to potato virus diseases. *Journ. Min. Agric.* **37**(3): 302-344, 1929.

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Studies on potato virus diseases. 4 Further experiments with potato mosaic. *Ann. Appl. Biol.* **16**(1): 1-13, 1929.

Positive proof of the transmission of potato mosaic by *Myzus persicae*. When potato mosaic virus was inoculated into healthy tobacco it produced ring spot. It is difficult for *M. persicae* to transmit the virus back to potato.



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Studies on potato diseases. 5—Insect transmission of potato leaf roll. *Ann. Appl. Biol.* **16**(2) : 209–229, 1929.

This is an extension of previous studies of this same subject.

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Studies on potato virus diseases. 6—Further experiments with the virus of a potato mosaic upon the tobacco plant. *Ann. Appl. Biol.* **16**(3) : 382–399, 1929. (*Rev. Appl. Mycol.* **9**(2) : 124, 133, 1930.)

An interesting report on cross-inoculation of tobacco with potato mosaic, resulting in four types of ring spot.

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Studies on potato virus diseases. 7—Some experiments with the virus of a potato crinkle with notes on interveinal mosaic. *Ann. Appl. Biol.* **17**(2) : 223–240, 1930.

This paper contains records of the author's experimental work on transmission of several virus diseases of potato.

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Insects in relation to potato virus disease. *Journ. Min. Agr. (Gt. Britain)* **37**(3) : 224–232, 1930.

Popular.

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Transmission of potato leafroll. *Nature (London)* **126**(3168) : 96, 1930.

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On the composite nature of certain potato virus diseases of the mosaic group as revealed by the use of plant indicators, and selective methods of transmission. *Proc. Roy. Soc. Bot.* **109**(762) : 251–267, 1931.

The author describes the technique for the isolation of two viruses, X and Y, from a symptomless streak carrying potato. Y is liable to fluctuation in virulence, X varies and causes several symptoms. The author believes that the different symptoms of various mosaic diseases are caused by strain of X rather than by different viruses.

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Virus diseases of potatoes. *Second Int. Cong. Path. Fac. Méd. Univ. Paris* **2**, 1931.

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Thrips *tabaci* Lind. as a vector of plant virus disease. *Nature* **127**(3214) : 852–853, 1931.

Reports that this insect can transmit the virus of ring-spot to *Solanum Capsicastrum*, *Datura* and tobacco. Also the spotted wilt of tomato and a virus disease of Dahlia.

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Studies on potato virus diseases. 8—On a ring-spot virus affecting Solanaceous plants. *Ann. Appl. Biol.* **18**(1): 1-15, 1931.

Ring spot disease of the virus type of *Solanum capsicastrum* is first reported from the British Isle. Extensive discussion of solanaceous virus disease follows.

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Studies on potato virus diseases. 9—Some further experiments on insect transmission of potato leaf-roll. *Ann. Appl. Biol.* **18**(2): 141-158, 1931.

Continuation of previous works by the author.

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Composite nature of certain potato viruses of the mosaic group. *Nature* **127**(3210): 702, 1931.

Natural and artificial manners of inoculation are discussed in regard to reaction on the plant to different types of mosaic.

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Virus diseases of plants and their relationship with insect vectors. *Biol. Rev. and Biol. Proc. Cambridge Phil. Soc.* **6**(3): 302-344, 1931.

A review of the subject with about 250 references in the bibliography. All known plant viruses are listed according to host plants and insect carrier given where known.

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Filtration of plant viruses. *Nature*. **130**(3276): 243, 1932.

Reports results similar to those carried on by MacClement and Henderson Smith. (*Nature* 130: 129, 1932.)

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Studies on plant virus diseases XI. Further experiments with a ring-spot virus: its identification with spotted wilt of tomato. *Ann. Appl. Biol.* **19**(3): 305-330, 1932.

A study of the English ring spot which is transmitted by *Thrips tabaci*. This disease which was first described from *Solanum capsicastrum* appears to be the same as the spotted wilt of Australia. It attacks a number of plants.

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The present status of plant virus research. *Biol. Rev.* **8**(2): 136-179, 1933.

A very excellent review of our knowledge up to this time.

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Spotted wilt: An important virus disease of the tomato. *Journ. Min. Agric.* **39**(12): 1097-1103, 1933.

Popular description and discussion of the disease which is widely spread in England.

Recent advances in the study of plant viruses. London, 423 p., 1933.

A book containing much valuable data.

Some virus diseases of the potato and other farm crops. Scottish Journ. Agric. 16(4): 446-456, 1933.

The author gives a comprehensive definition of a virus and a general review of present knowledge on the virus diseases of potatoes and other crops and their transmission by insects.

**Smith, L[oren] B[arlett]**

Spinach blight and its transmission by insects. Virginia State Ent. and Plant Path. Rpt. 11(1916-17): 40-50, 1918. (Phytopathology (Abstract) 8(1): 14, 1918.)

A review of the paper by McClintock and Smith (1918).

The life history and biology of the pink and green aphid (*Macrosiphum solanifolii*, Ashmead.) Virginia Truck Expt. Sta. Bull. 27: 27-79, 1919.

Potato spraying experiments on the control of the pink and green aphid (*Macrosiphum solanifolii*, Ashmead.) Virginia Truck Expt. Sta. Bull. 29, pt. 1, p. 101-118, 1919.

Breeding mosaics resistant spinach and notes on malnutrition. Virginia Truck Expt. Sta. Bull. 31-32: 137-160, 1920.

**Smith, R[alph] E[lliott]**

Growing China asters. Massachusetts Hatch Expt. Sta. Coll. Agric. Bull. 79, 26 p., 1902.

The author gave twelve pages to this diseases long before the cause was known.

Beet-blight investigations. California Agr. Expt. Sta. Bull. 184: 240-241, 1908.

....., & Smith E[lizabeth] H[ight]  
California plant diseases. Calif. Agric. Expt. Sta. Bull. 218: 1039-1193, 1911.

The investigation of "Physiological" plant diseases. Phytopathology 5(1): 83-93, 1915.

This is a general paper which includes a brief discussion of virus diseases.

-----, & Boncquet, P[ierre] A[uguste]

New light on curly top of the sugar beet. *Phytopathology* 5(2) : 103-107, 1915.

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Connection of a bacterial organism with curly leaf of the sugar beet. *Phytopathology* 5(6) : 335-342, 1915.

The authors corroborate the findings concerning the relation of *Eutettix tenella* to this disease, give a brief discussion of the histology of the diseased plants and of a bacterium found in them.

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The beet leafhopper and curly-leaf disease that it transmits. *Phytopathology* 8(4) : 168, 1918.

A complementary statement concerning Dr. E. D. Ball's *Bulletin* 155 of Utah Agric. Expt. Sta., 1917, "The beet leafhopper and the Curly-leaf Disease that it Transmits."

**Smith, Roger C., & Barker, H[enry] D.**

Observations on the "yellow disease of beans and related plants in Haiti." *Journ. Econ. Ent.* 23(5) : 843-847, 1930.

The disease is either caused by a virus which is transmitted by a leafhopper (*Empoasca* sp.) or caused by the insect. It is not transmitted in the seeds.

**Smyth, E[ugene] Graywood**

Entomological Work. (The yellow stripe disease of sugar cane.) Report of the Com. of Agric. & Labor of Puerto Rico. From Report of the Governor 1919: 685-713, 1919.

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Insects and mottling diseases. *Journ. Dept. Agric. of Puerto Rico*, 3(4) : 83-116, 1919. (*Rev. Appl. Ent. Ser. A.* 8: 483, 1919.)

Gives a record of experiments conducted in an effort to determine the insect carriers of the disease. The results were negative.

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List of the insects and mite pests of sugar cane in Puerto Rico. *Journ. Dept. Agric. Puerto Rico.* 3: 135-150, 1919.

A paper prepared during the author's studies on insect transmission of the sugar-cane mosaic.

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Report Division of Entomology. *Ins. Expt. Sta. Puerto Rico Ann. Rpt.* 1919-20: 83-89, 1920.

**Snell, K[arl]**

Panaschierung an Kartoffelblättern. (Variegations of potato leaves.) Nachrichtenbl. Deutsch. Pflanzenschutzd. **3**: 77, 1923.

**Snyder, William C.**

Pod deformation of mosaic-infected peas. Phytopathology **34** (1): 78-80, 1934.

Review of Lindford's report made on a pea-disease in 1928 (U. S. D. A. Br. Plant Indus. Suppl. 67, 1929.) Discussion of his observations.

**Sokal, N.**

Nouvelles recherches sur le virus filtrant de la pomme de terre. (New researches on potato filterable virus.) Comptes Rendus Soc. Biol. **103**: 955-956, 1930.

**Sollewijn, G.**

Report over de serehziekte in het Cheribousche suikerriet. Indische Opmerker Maart 13, 1884.

**Solovieva, Mme N. V.**

(Observations on potato diseases in the Terek district in 1927-1928.) Bull. North Caucasian Plant. Prot. Stat. Rostoff on Don. **6-7**: 85-94, 1930.

Potato degeneration diseases, chiefly leaf roll is reported from that district.

**Soltwedel, F.**

De serehziekte. Meded. Proefst. Midden-Java, Samarang, 1889.

**Sorauer, Paul C[arl Moritz]**

(Note at the end of some papers on a disease of sugar cane.) Zeitschr. f. Pflanzenkrankheiten **1**(6): 360, 1891.

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Die Augabliche Kartoffel-epidemie genenmt die Blattrollkrankheit. International Phytopathologischer Dienst. **1**: 33-59, 1908.

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Die neueren Untersuchungen von Quanjer uber die Ursache der Sorauer'sche Standpunht. Zeitschrift fur Pflanzenkranheiten, Bd. **23**(4): 244-253, 1913.

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Die Mosaikkkrankheit des tabaks. (Mosaic disease of tobacco.) Handbuch der Pflanzenkrankheiten, **1**: 678-683, 1909.

**Soriano, S.**

El "corcovo" y el "polvillo" del tabaco en la República Argentina. (The "hunchback" and the "powdery" of tobacco in the Argentine Republic.) *Argentina Rev. Fac. Agron. & Vet.* 7(2) : 371-392, 1931.

Account of these two diseases of occurrence in the Argentine Republic. The two diseases are fully described and the author concludes that "corcovo" and "polvillo" are varying manifestations of a single disease of the virus group. Both are decidedly infectious.

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Notas sobre algunas enfermedades de los vegetales producidos por "virus" en la República Argentina. (Notes on some vegetables diseases caused by "virus" in the Argentine Republic.) *Physis, Buenos Aires* 11(38) : 87-90, 1932.

**Sornay, P. de**

Mosaic in imported canes. *Rev. Agricole Maurice*, 1928: 12, 1928.

The author suggests that the virus may be present in apparently immune canes. A brief paper suggesting mosaic may be dormant in canes.

**Sorokin, Helen [Petrovna]**

The destruction of the chloroplasts in tomato mosaic. *Phytopathology (Abstract)* 16(1) : 66-67, 1926.

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Phenomena associated with the destruction of the chloroplasts in tomato mosaic. *Phytopathology* 17(6) : 363-370, 1927.

**Southwell, H.**

Virus diseases of potatoes and the raising of seed potatoes in the Irish Free State. *Journ. Minis. Agric.* 34(1) : 19-25, 1927.

Popular account of the subject. Brief review of the work done by research workers, description of the disease, nature and the production of healthy seed are discussed.

**Spaeth, C. P., & Kraybill, Henry R[eist]**

A bio-chemical study of the false-blossom disease of the cranberry. *Journ. Agric. Res.* 34 : 35-48, 1927.

Diseased plants are higher in reducing sugar, sucrose, starch, acid-hydrolyzable substances and dry matter, than healthy plants. They are lower in moisture. No difference in nitrogen content.

**Speare, A[lden] T[rue]**

Yellow-stripe disease. *Hawaiian Planters' Record* 10(4) : 381-382, 1914.

**Spieckermann, A[ibert]**

Beiträge zur Kenntnis der Bakterienring- und Blattrollkrankheit der Kartoffelpflanze. Jahresbericht, Vereinigung für Angewandte Botanik, Jahrg. 8, 1910, p. 1-19, 173-177, 1911.

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 Untersuchungen über die Kartoffelpflanze und ihre Krankheiten. In Gemeinschaft mit P. Kotthoff. Landwirtschaftliche. Jahrbücher, **63**: 659-732, 1914.

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 Die Beurteilung der mosaikkrankheit bet der Anerkennung. Die Kartoffeln **2**: 111-113, 1922.  
 Popular.

**Spisar, K[arl]**

Einiger über die curly-leaf Krankheit der Zuckerrübe. Ztschr. Zuckerindus. Böhmen, **34**: 345-349, 1910.

**Sprecher, A[ndreas]**

Recherches mycrocopiques sur les sucs végétaux. (Microscopical researches about the vegetable saps.) (Mosaic diseases and variegations.) Rev. Gén. Bot. **33**: 6-33, 1921.

**Sreenivasaya, M., & Sastri, B. N.**

Contributions of the study of spike-disease of Sandal (*Santalum album* Linn.) I. Diastatic activity of the leaves. Journ. Indian Inst. Sci. **11A**(3): 23-29, 1928.

-----, & **Gopalaswami Naidu, G.**

Contribution to the study of spike disease of Sandal (*Santalum album* Linn.) Part V, Transmission of spike by budding. Journ. Indian Inst. Sci. **11 A** (19): 244-247, 1928.

This was transmitted by budding and showed symptoms in 131 days.

-----, & **Sastri, B. N.**

Contributions to the study of spike disease of Sandal (*Santalum album* Linn.) Part VIII. Chemical composition of tissue fluid from the leaf. Journ. Indian Inst. Sci. **12 A** (17): 239-244, 1929. (Rev. Appl. Mycol. **9**(5): 277, 1930.)

Diseased plants contain less ash and calcium and more nitrogen, maltose and reducing sugar than healthy trees.

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Contribution to the study of spike disease of Sandal (*Santalum album* Linn.) Part IX. Chemical composition of tissue from the stem. Journ. Indian Inst. Sci. **12 A** 17: 245-250, 1929. (Rev. Appl. Mycol. **9**(5): 277, 1930.)

Diseased plants contain more nitrogen, phosphorus and calcium than healthy plants.

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Contribution to the study of spike-disease of sandal (*Santalum album* Linn.) Part XI. New method of disease transmission and their significance. Journ. Ind. Inst. Sci. **13 A** (10) : 113-117, 1930.

A report of experimental work in grafting and leaf infection.

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Occurrence of manitol in spike disease of sandal (*Santalum album* Linn.) Nature **126**(3177) : 438, 1930.

Manitol appears to be one of the metabolic products of the virus.

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Masking of spike-disease symptoms in (*Santalum album* Linn.) Nature **126**(3190) : 957, 1930.

The author believes that masking of the symptoms is influenced by intense sunshine and temperature.

-----, & Rangaswami, S.

Contribution to the study of spike-disease of sandal (*Santalum album* Linn.) Part XII. Ecology of sandal. Journ. Indian Inst. Sci. **14 A** (5) : 59-65, 1931.

A survey was made to determine the relation of sandal-wood hosts to the spike disease. There is some evidence that sandal spike on certain hosts is more susceptible than on other hosts.

**Stahel, Gerold**

De Zeefvatenziekte (phloëmnecrose) van de Liberikoffie in Suriname. (Phloem necrosis of Liberian coffee in Suriname.) Meded. Dept. Landb. Suriname, Bul. **12**, 2 p. 1917.

The author proposes the name phloem-necrosis disease due to features resembling leaf roll of potato and sereh of sugar cane.

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Phloem necrosis of Liberia coffee in Suriname. Dept. Landb. Suriname Bull. **40**, 31 p., 1920.

-----, & Bunzli, H.

Nieuwe onderzoekingen over de zeefvatenziekte (phoëmnecrose) van den Koffi in Suriname. (New researches about phloem-necrosis of coffee in Suriname.) Indische Mercur **53**(42) : 919-921, 1930.

Phloem-necrosis attacks all species of coffee (*C. arabica*, *C. robusta*) in Surinam and is the most serious disease. The living sieve tubes contains a *Phytomonas* sp. which is similar to *P. Davidi*, but smaller.



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 Zur kenntnis dessiebrohrenkrankheit (Phloemnecrosis) des karfu-  
 baumes in Surinam. I. Mikroskopische untersuchungen und in-  
 fektionsversuche. (Contribution to the knowledge of the sieve-  
 tube diseases (phloem necrosis) of the coffee tree in Surinam.  
 I. Microscopic investigations and inoculation experiments.)  
 Phytopath. Zeitschr. 4(1): 65-82, 1931.

The most serious diseases of Liberian coffee in Surinam. Not known  
 in any other country. An organism has been found in the sieve tubes  
 which is described as *Phytomonas leptovascularum*.

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 Zur kenntnis der siebrohrenkrankheit (Phloemnekrose) des kaffee-  
 baumes in Surinam. II. (Contribution to the knowledge of the  
 sieve-tube disease (phloem necrosis) of the coffee tree in  
 Surinam. II.) Phytopath. Zeitschr., 4(5): 539-544, 1932.

The author reports excessive necrosis in diseased plants. The re-  
 disease of Brazil shows similar symptom. The disease was observed  
 in Pernambuco and Parahyba in 1917.

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 Verlag van den directeur. (Report of the Director) Suriname  
 Dept. Agric. Expt. Ann. Rept. 1931-32: 5-34, 1933.

Continuation of previous work on sieve tube (Phloem necrosis) of  
 coffee trees.

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 Zur Kenntnis der Siebröhrenkheit des Kaffeebaumes in Suri-  
 name III. (On the study of the "Sieve tube disease"  
 (Phloemnecrosis) of the coffee tree III.) Phytopath. Zeitschr.  
 6(4): 335-357, 1933.

Description of the disease and detailed account of the work done up  
 to the present on this obscure disease.

**Stahl, C[orwin] E[loyd,] & Carsner E[ubanks]**

Obtaining beet leafhoppers non virulent as to curly top. Journ.  
 Agric. Res. 14(9): 393-394, 1918.

Gives method of obtaining beet leafhopper which were nonvirulent  
 as to curly top.

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 A discussion of *Eutettix tenella* (Baker) as a carrier of curly-  
 top of sugar beets. Journ. Econ. Ent. 16(6): 476-479, 1923.

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 A mosaic of corn. Proc. 2nd Conf. Internat. Soc. Sugar-Cane  
 Technologists 1927: 85-87, 1927.

The most common mosaic of corn in Cuba produces stripping. It is  
 carried from corn to corn by *Peregrinus maidis*. The sugar-cane mo-  
 saic is carried from cane to corn by *Aphis maidis*.

-----  
 Corn stripe disease in Cuba not identical with sugar-cane mosaic.  
 Trop. Plant Res. Foundation Bull. 7:3-11, 1927. (Rev. Appl.  
 Ent. Ser. A. 17:420, 1927; Rev. Appl. Mycol. 7:158-160,  
 1927.)

This paper gives proof that the corn-stripe disease of Cuba which  
 is similar to sugar-cane mosaic is different. The disease is transmit-  
 ted by a leafhopper (*Peregrinus maidis*, Ashm.) and apparently not  
 transmitted by *Aphis maidis*, Fitch.

-----, & Faris, J[ames] A[braham]

El comportamiento de las nuevas cañas P. O. J. en relación con  
 la enfermedad del mosaico de la caña de azúcar en Cuba. (The  
 behavior of the new P.O.J. canes toward mosaic.) Est.  
 Exp. del Club Azucarero de Cuba, p. 13, 1929, (Trop. Plant  
 Res. Foundation, Bull. 9, 12 p., 1929.)

The authors discuss the comparative resistance of several varieties,  
 the results of inoculation of several varieties by means of *Aphis maidis*.  
 The paper closes with a discussion of resistance, immunity and tol-  
 erance.

Stakman, E[lvin] C[harles]

Raspberry mosaic. Minnesota Hort. 53(3):85-87, 1925.

Stanley, W. M.

The action of trypsin on tobacco-mosaic virus. Phytopathology  
 (Abstract) 24(1):18, 1934.

Standford, E[rnest] E[lwood], & Davy, E[dward] D[awson]

Alkaloidal content of daturas affected by mosaic injury. Science,  
 n.s. 58(1509):450-451, 1923.

Staner, P.

Belgian Congo: A new disease of sisal. Int. Bull. Plant. Protect.  
 3(12):183, 1929. (Rev. Appl. Mycol. 9:316, 1930.)

Note on a filterable virus disease of sisal, apparently new.

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 Mosaïque des feuilles de manioc. (Mosaic of Cassava leaves.)  
 Bull. Agric. Congo Belge, 22(1):75-80, 1931.

A brief description of inoculations and filtration experiments.

-----, & Verplancke, G[ermain]

Un état pathologique du Sisal au Congo Belge. Bull. Agr.  
 Congo Belge 21:864-866, 1931.

Starrett, Ruth Colvin

A new host of sugar-beet curly top. Phytopathology 19(11):  
 1031-1035, 1929.

The author gives proof that *Oxalis stricta* is a susceptible host to the curly-top virus.

**Stell, F.**

Sugar-cane mosaic in Trinidad. Int. Sugar Journ. **31**(368): 414-415, 1929. (Rev. Appl. Mycol. **9**(2): 131-132, 1930.)  
A brief report.

**Stepanoff, K. M.**

(Some observations on the curling of tomato leaves in the district of Astrakham.) Comment. Inst. Astrachanesis ad defensionem plantarum **2**(4): 41-54, 1930.

The author believes that the disease he is dealing with is the same or similar to that described by Güssow (Phytopath. **11**(9): 380-383, 1921.) Evidence indicates that a virus is the causal agent.

**Stevens, Neil E[verett]**

Field observations on false blossom of the cultivated cranberry. Phytopathology **15**(1): 85-91, 1925.

-----, & Sawyer Jr., W[illiam] H[ayes]

The distribution of cranberry false blossom. Phytopathology **16**(3): 223-227, 1926.

The first statement in the literature that this disease is infectious.

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The false blossom situation. Amer. Cranberry Growers' Assoc. Proc. Ann. Meeting **57**: 20-27, 1927.

Report of eight years' field studies. Conclusions reached that the disease is infectious and spread by insects. Control measures are discussed.

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The false blossom situation in 1928. Wisconsin Cranberry Growers' Assoc. Proc. Ann. Meeting. **42**: 17-22, 1928.

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The spread of cranberry false blossom in the United States. U. S. D. A. Circ. **147**, 18 p., 1931.

A very excellent discussion of the subject as indicated by the title.

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Losses due to cranberry false blossom in New Jersey. Int. Bul. of Plant Protec. **7**(3): 53, 1933.

Popular.

**Stevenson, John A[lbert]**

Enfermedad de la caña de azúcar en Puerto Rico. (Sugar-cane disease in Puerto Rico.) Mundo Azucarero **5**(1): 19-24, 1917.

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An epiphytotic of cane disease in Puerto Rico. *Phytopathology* 7(6): 418-425, 1917.

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La nueva enfermedad de la caña. (The new sugar-cane disease.) *Puerto Rico Ins. Expt. Sta. Circ.* 11, 12 p., 1917. (Louisiana Planter & Sugar Manufacturer, 59: 76-78, 1917; *Agric. News Barbados*, 16: 286, 1917.)

A paper on the sugar-cane mosaic in Puerto Rico.

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Report of the Pathologist for 1917. *Ins. Expt. Sta. Puerto Rico Ann. Rpt.* 1916-17: 37-77, 1917.

A report on the presence of sugar-cane mosaic in Puerto Rico.

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La enfermedad nueva de la caña. (The new sugar-cane disease.) *Rev. Agric. Puerto Rico*, 1(1): 18-25, 1918.

A detailed popular account of sugar cane mosaic. The author states that the disease appeared to be in the Island for several years previously; but very recently that it has attracted attention and become a serious menace to the sugar industry in Puerto Rico. The author discusses the disease giving symptoms, susceptible varieties, means of transmission and control measures.

-----  
Notas sobre medios de combatir el matizado de la caña. (Notes on how to control sugar-cane mosaic.) *Rev. Agric. Puerto Rico*, 2(2): 11-12, 1918.

Brief notes devising the means to fight mosaic of sugar cane.

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La enfermedad del mosaico del tabaco. (Tobacco mosaic disease.) *Rev. Agric. Puerto Rico* 2(1): 39-44, 1918.

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El matizado de la caña. (Sugar-cane mottling.) *Rev. de Agric. de Puerto Rico*, 2(1): 51-52, 1918.

Brief note stating that mosaic is due to virus and not to fertilizers or soil conditions.

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The mottling or yellow-stripe disease of sugar cane. *Journ. Dept. Agric. Puerto Rico*, 3(3): 3-76, 1919.

A very lengthy paper giving distribution on the Island, rate and manner of spread, varietal susceptibility, symptoms, field culture relations, possible causes and methods of transmission, plot experiments and methods of control.

Control of sugar-cane mottling disease. Sugar **23**: 92-95; 539-554, 1921.

gives a description of the disease and advises the use of immune or resistant varieties.

**Stewart, F[red] C[arlton]**

Two destructive lily diseases. New York, (Geneva) Agr. Expt. Station. Ann. Rept. **1895**: 520-524, 1896.

First record of the virus disease on Bermuda lily.

Potato diseases on Long Island in the season 1895. New York State Agric. Expt. Sta. Bull. **101**: 83-86, 1896.

Two destructive lily diseases. New York (Geneva) Agric. Expt. Sta. Ann. Rpt. **1895**: 520-524, 1896.

The first record of the lily mosaic.

Another stem blight of potatoes. New York State Agric. Expt. Sta. 15th Ann. Rpt. **1897**: 509-510, 1897.

The communicability of potato stem blight. New York State Agric. Expt. Sta. 16th Rpt., **1898**: 421-423, 1898.

., & **Eustace, H[arry] J[oshua]**

Raspberry cane blight and raspberry yellows. New York Agric. Expt. Sta. (Geneva) Bull. **226**: 331-366, 1902.

A brief record.

., & **Sirrine, F[rank] A[twood]**

The Spindle-Sprout Disease of Potatoes. New York (Geneva) Agric. Expt. Sta. Bull. **399**: 133-143, 1915. Popular Edition of the same. (Phytopathology (Abstract) **4**: 395, 1914.)

A study of field conditions. Cause unknown.

Observations on some degeneration strains of potatoes. New York Agric. Expt. Sta. Bull. **422**, 12 p., 1916.

Further studies on the effect of missing hills in potato field and on the same seed tuber. New York Agric. Expt. Sta. (Geneva) Bull. **389**, 52 p., 1921.

Raspberry mosaic. Fruit diseases problems of to-day. Proc. N. Y. State Hort. Soc. **1922**: 61-69, 1923.

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Control of leaf roll and mosaic in potatoes by isolating and roguing the seed plant. New York (Geneva) Agric. Expt. Sta. Bull. **522**, 14 p., 1924.

Report of experimental data obtained during five seasons with leaf roll and mosaic diseases of potatoes.

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Observations on masking of raspberry mosaic by high temperature. Phytopathology (Abstract) **15**(1): 80, 1926.

-----, & Glasgow, Hugh  
Aphids as vectors of leaf roll among sprouting potato tubers. New York. (Geneva) Agric. Expt. Sta. Tech. Bull. **171**, 21 p., 1930.

After tests made by the authors, conclusions were reached that aphids are capable of spreading leaf roll among sprouting seed potatoes, confirming Murphy's assertion in Ireland. Control methods are given.

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Aphids on potato sprouts. New York Agric. Expt. Sta. Circ. **119**, 6 p., 1931.

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Aphids as vectors of leaf roll among sprouting potato tubers. Phytopathology (Abstract) **21**(1): 103-104, 1931.

**Stewart, V[ern] B[onhane], & Reddick, Donald**

Bean mosaic. Phytopathology (Abstract) **7**(1): 61, 1917.

**Stift, A[nton]**

(Sugar-beet and potato diseases in 1908.) Centbl. Bakt. II Abt., **23**(6-9): 173-192, 1909.

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(Some of the more important contributions in 1909 on the diseases of sugar beets and potatoes.) Centbl. Bakt. II, Abt. **26** (18-19): 520-560, 1910.

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(A review of literature relating to diseases of sugar beets and potatoes.) Centbl. Bakt. I Abt., **33**(17-19): 447-496, 1912.

**Stock, J[ohn] E[wald] van der**

Proeve cener verklaring der gelestrepenziekte en der serehziekte. (Proof of a hypothesis of the yellow-stripe disease and the sereh disease.) Meded. Prof. Oost-Java Series 4, No. **36**: 457-477, 1907. (Arch. Java Suikerinders. Jaarg. **15**: 581-601, 1907.)

**Stone, George E[dward], & Chapman, G[eorge] H[enry]**

Report of the botanists. Massachusetts Agric. Expt. Sta. Rpt.  
p. 120-150, 1907.

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Investigations relating to mosaic disease. Massachusetts Agric.  
Expt. Sta. Rept. 20:136-144, 1908.

**Stone, R[oland] E[lisha], & Howitt, John Eaton**

Experiments with winter blight or streak of tomatoes. Phy-  
topathology (Abstract) 12(1):41, 1922.

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Winter blight or streak in tomatoes. Phytopathology 15(5):  
300, 1925.

The author reports success in controlling tomato streak or winter  
blight in commercial greenhouses by increasing phosphoric acid and  
potash in fertilizers.

**Stoneberg, H[ugo] F.**

The productiveness of corn as influenced by the mosaic disease.  
U. S. D. A. Tech. Bull. 10, 18 p., 1927.

The results of extensive experimental work showing the importance  
of this disease.

**Storey, H[arold] H[aydon]**

The major cane diseases. South African Sugar Journ. Cong.  
& Exhibit. p. 54-61, 1923.

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Treatment of mosaic in Natal. South African Sugar Journ. 7  
(9):745-747, 1923.

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A disease of maize and its probable relation to the control of  
streak disease in Uba cane. South African Sugar Journal,  
8:647-649, 1924.

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Disease of sugar cane of the mosaic type in South Africa. Part  
I. Journ. Dept. Agric. South Africa, 9(2):108-117, 1924.  
(Rev. Appl. Ent. Ser. A 12:469; Rev. Appl. Mycol. 4:122-  
123, 1924.)

A discussion of conditions with reference to the disease in South  
Africa.

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The transmission of a new plant virus disease by insects. Nature  
114(2859):245, 1924. (Rev. Appl. Mycol. 3:685-686, 1924.)

Transmission of a maize disease by *Balclutha* sp. The disease is similar to the mosaic of cane, maize and other grasses. The sugar-cane mosaic is transmitted by *Aphis maidis*.

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 Streak disease in Uba cane. Louisiana Planter & Sugar Mfg. **73**(15): 268-270. (South African Sugar Journal Congress & Exhibition number p. 63-66; Rev. Appl. Mycol. **4**: 123, 1924.)  
 A study of losses due to this disease. Losses 10 per cent.

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 Streak disease an infectious chlorosis of sugar cane, not identical with mosaic disease. Rpt. Imp. Bot. Conf. (London) July, 1924. Proc. p. 132-144, 1924. (Rev. Appl. Mycol. **4**: 442-443, 1924.)

The author gives evidence that the disease is an infectious chlorosis.

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 The influence of streak disease upon the yield of Uba cane. South African Sugar Journ. **8**(7): 519-522, 1924. (Rev. Appl. Mycol. **3**: 686, 1924.)

Experimental plots showed losses ranging from 30 to 50 per cent.

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 Streak disease of Uba cane. Journ. Dept. Agric. South Africa, **10**: 532-537, 1925.

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 Streak disease of sugar cane. Union of South Africa Dept. Agric. Sci. Bull. **39**, 30 p., 1925. (Rev. Appl. Mycol. **5**: 1-2, 1925.) Facts About Sugar, **20**(40): 953, 1925.

The author gives a review of the literature, the distribution, the symptoms, list of susceptible varieties of cane and a list of other species of plants. The disease causes losses of 12 to 50 per cent and is transmitted by a jassid leafhopper, *Balclutha mbila* (Naude). The author recommends the use of new varieties.

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 Streak disease of cane. South African Sugar Journ. Annual, p. 113-118, 1925.)

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 Sugar-cane diseases of the mosaic type in South Africa. Part II. South Africa Dept. Agric. Journ. **10**(6): 532-537, 1925. (Rev. Appl. Ent. ser. **A**. **13**: 393, 1925. Rev. Appl. Mycol. **5**: 2, 1925.)

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 The Transmission of streak disease of maize by leafhopper, *Balclutha mbila*, Naude. Ann. Appl. Biol. **12**(4): 433-439, 1925.  
 Although Uba cane is immune to mosaic, it is susceptible to streak. The disease is transmitted by leaf-hopper, *Balclutha mbila* (Naude).



-----, & Bottomley, A[nnie] M.

Transmission of rosette disease of the ground nut. *Nature* **116**: 97-98, 1925. (*Agric. Journ. India* **21**: 68-69, 1926.)

This disease is transmitted by *Aphis leguminosae*.

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Interspecific cross-transmission of plant virus disease. *South African Journ. Sci.*, **23**: 305-306, 1926. (*Rev. Appl. Mycol.* **6**: 377, 1927.)

The streak disease is transmitted from maize to maize by *Balclutha mbila*. Also from Uba to Uba cane. Failed to transmit from maize to Uba. Disease also reported on *Eleusine indica* and *Digitaria horizontalis*.

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Recent researches on plant virus disease. *South African Jour. Sci.* (Summary), **23**: 307, 1926. (*Rev. Appl. Mycol.* **6**: 377, 1927; *Int. Sugar Journ.* **29**: 345, 487, 1927.)

A summary of recent work.

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The cane disease situation. Urgency of the need for the control of mosaic. *African Sugar & Cotton Planter* **2**(7): 11-15, 1926. (*Rev. Appl. Mycol.* **6**: 54, 55, 1926.)

A warning as to the necessity for control.

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The cane disease situation. *Proc. 4th Ann. Congress So. Africa Sugar Assoc.* **1926**: 69-73, 1926. (*The Planter and Sugar Manuf.* **78**(2): 28-30, 1927.)

The author believes that mosaic can be eradicated by the use of resistant varieties.

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Rosette disease of ground nuts (*Aphis leguminosae* (Theo.))  
*Proc. S. & E. African Agric. Conf. Nairobi* p. 213-214, 1926.

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Streak disease of Uba cane. *Jamaica Dept. Agric. Microb. Circ.* **6**: 88, 89, 1926.

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Strain of the viruses affecting the graminea. *Proc. Conf. Int. Soc. Sugar-Cane Tech.* **2**: 87-88, 1927.

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Control of streak disease on maize and sugar cane. *Proc. South & East Agric. Conf.* 1926, p. 212, 213, 1927. (*Rev. Appl. Ent. Ser.* **A**. **15**: 569, 1927.)

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Transmission studies of maize streak diseases. Ann. Appl. Biol. **15**(1) : 1-25, 1928.

After the *Balclutha (Cicadula) mbila* feeds on diseased corn, 12-48 hours at 30-35 degrees C. incubation is necessary before it can transmit the disease. At lower temperature, a longer time is necessary.

-----, & Bottomley, A[nnie M]  
The Rosette Disease of Peanuts (*Arachis hypogaea* L.) Ann. Appl. Biol. **15**(1) : 26-45, 1928.

The authors give proof that it is a virus disease and that it is carried by *Aphis leguminosae*.

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Plant pathology. First Ann. Rpt. East African Agric. Res. Stat., Amani 1928-1929 : 12, 1929. (Rev. Appl. Mycol. **9**(2) : 88, 89, 1930.)

A record of mosaic of sugar cane, streak of maize, rosette of ground nut curly-leaf cassava and mosaic of tabacco.

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A mosaic virus of grasses, not virulent to sugar cane. Ann. Appl. Biol. **16**(4) : 525-532, 1929.

A discussion of a virus disease of maize and sorghum which is indistinguishable from sugar-cane mosaic. It is carried by *Aphis maidis*.

-----, McClean, A[lan] P[ercy] D[ouglas]  
The transmission of streak disease between maize, sugar cane and wild grasses. Ann. Appl. Biol. **17**(4) : 691-719, 1930.

The authors give the results of transmission experiments with the streak disease on maize, sugar cane, *Digitaria horizontalis* and *Eleusine indica*. The virus from maize does not produce permanent infection in cane. The virus from Uba produces a mild form of the disease in maize. The disease occurs in P. O. J. 213 previously supposed to be immune. The authors give a list of wild grasses believed to be susceptible. The streak from *D. horizontalis* can be transmitted to maize and back but not to cane. *E. indica* was not infested with virus from cane or maize but was infested with virus from P. O. J. 213.

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Plant Pathology. Second Ann. Rpt. East African Agric. Res. Stat. Amani. 1929-30, 1930.

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The bearing of insect-vector on the differentiation and classification of plant viruses. Deuxième Congr. Internat. Path. Comp. Paris II. Comptes Rendus & Communications **2** : 471-479, 1932.

Review of our knowledges in regard to insect vectors and its relation to the virus disease type.

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The inheritance by a leaf-hopper of the ability to transmit a plant virus. *Nature* **127**(3216): 928, 1931. (*Proc. Roy. Soc. B* **112**(774): 46-60, 1932.)

Certain individuals of *Cicadulina mbila* inherit the ability to transmit the streak disease of corn. Others do not. This character can be fixed by breeding.

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A new virus disease of the tobacco plant. *Nature* **128**(3222): 187, 188, 1931.

A new virus disease in Tanganyika. It has been transmitted by grafting and by an undetermined aleyrodid.

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The filtration of the virus of streak disease of maize. *Ann. Appl. Biol.* **19**(1): 1-5, 1932.

This disease has not been transmitted from plant to plant by mechanical methods but is transmitted by *Cicadulina mbila*. Juice from diseased plants plus sucrose up to 10 per cent can be taken through membranes by the insect and inoculated into corn. The virus will pass Chamberland L1 and Berkefeld V filter (which retains *Bacillus pyocyaneum*), Chamberland L3 and Berkefeld N. Candles. It did not pass a Seitz E. K. disc.

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Leaf curl of tobacco in Southern Rhodesia. *Rhodesia Agric. Journ.* **29**(3): 186-192, 1932.

The leaf curl, crinkling or frenching of Rhodesia are the same as crinkly dwarf in South Africa, Cabbaging in Nyasaland and Kroepoeh in Java. It is transmitted by *Bemisia gossypiperda*.

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Investigation on the mechanism of the transmission of plant viruses by insects. I. *Proc. Roy. Soc. B* **113**: 463-485, 1933.

The author gives the results of studies which lead to the conclusion that the streak virus taken in by *Cicadulina mbila* passes through the wall of the intestine and into the blood. *C. mbila* was not successfully inoculated with the virus of maize stripe and mosaic diseases; nor *Peregrinus maidis* and *Aphis maidis* with the virus of streak.

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Report of the Plant Pathologist. East African Res. Stat. Amani. Fifth Ann. Rpt. **1932-33**: 13-17, 1933.

This report is wholly on studies on the following virus diseases: Sugar-cane streak disease, tobacco and cassava mosaic.

### Stormer, K[urt]

The dying of fruit trees and the leaf-roll disease of the potato. *Jahresber. Ver. Angew. Bot.* **7**: 119-170, 1909.

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Die Blattrollkrankheit der Kartoffel. (Leaf-roll disease of potato.) Ill. Landwirtschaftliche Zeitung. Jahrg. 30(60):565-566, 1910.

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Plant diseases for the year 1909 of special notice. Landw. Wehnschr. Sachsen, 12(2):10-12, (3):19-21, (4):27-29, 1910.

-----, & Morgenthaler, O[tto]  
The leaf-roll disease of potatoes in Saxony. Naturw. Ztschr. Forst. u. Landw., 9(12):521-551, 1911.

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Abban und wiederanfrischung von Kartoffelsorten durch Bodeneinflüsse. Ill. Landwirtschaftliche Zeitung. Jahrg. 51:177-179, 1911.

**Stout, A[rlow] B[urdette]**

Why we fail with garden lilies. Journ. New York Botanical Garden 28:285-296, 1927.

The author gives two pages to the importance of virus diseases.

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Virus diseases of lilies in England. Garden Chron. 88(2296):532-533, 1930.

A survey of lilies infected with virus diseases and the insect vectors.

**Stout, Gilbert L[eonidas]**

A mosaic type in certain cases of peach yellows occurring near potatoes. Phytopathology (Abstract) 20(1):126, 1930.

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The peach yellows situation in Illinois. U.S.D.A. Br. Plant Indus. Plant Disease Reporter 14(4):28-32, 1930. Mimeographed.)

**Stover, W[ilmer] G[arfield]**

Experiments with tomato streak. Phytopathology (Abstract) 18(1):154, 1928.

-----, & Vermillion, M. T.

Some experiments with a yellow mosaic of tomato. Phytopathology (Abstract) 23(1):34, 1933.

**Stranviak, F[rantisvek]**

La mosaicá virus de la Vigne. (The virus mosaic of the vine.) Second Intern. Congr. Path. Comp. (Paris) 1:367, 1931.

- , **Blattny C[tibor Eugen Maria Karll], & Klecka, A.**  
 Mosaika revy vinne. (Predbezne). (Mosaic of the vine.) Preliminary report. *Ochrana Rostlin*, **11**: 89-98, 1931.  
 A description of disease which can be transmitted by grafting, by injection of juice of diseased plant and by *Leconium corni*.
- Strong, Richard P[earson] & Shattuck, G[eorge] C[heever]**  
 Plant diseases. (The African Republic of Liberia and the Belgian Congo.) *Contr. Dept. Trop. Med. & Inst. Trop. Biol. & Med.* **5**. (Harvard African Expedition 1926-27) p. 389-410, 1930.  
 Mandioca (*Manihot palmata*) plants through Liberia and in some districts of Belgian Congo were found to be affected by a disease of the mosaic type.
- Stuart, W[illiam]**  
 Plant lice transmit mosaic. *Potato Mag.* **2**(6):16, 1919.
- Stucky, Henry Perkins**  
 Plant diseases investigations of the Georgia Experiment Station. *Georgia Sta. Rept.* **1920**: 4-5, 1920.
- Sturgis, W[illiam] C[odman]**  
*Conn. Stat. Bul.* **111**, 1892; **115**:124, 1893.  
 Brief note describing peach yellows, important as an early record.
- Preliminary notes on two diseases of tobacco. *Connecticut Agric. Expt. Sta. Ann. Rpt.* 1898, **22**: 242-260, 1899.  
 Gives description and results of studies. Believes the disease is physiological. Discusses the calico or mosaic of tobacco with reference to cause, soil, transmission and preventive measures. Also a spotting of tobacco which is probably the same as Iwanowski's "pockenkrankheit".
- On the effects on tobacco, of shading and the application of lime. *Connecticut Agric. Expt. Sta. Ann. Rpt.* **23**: 252-261, 1899.
- On the so-called "Grain" or wrapper tobacco. *Connecticut Agric. Expt. Sta. Ann. Rpt.* **23**: 262-264, 1900.
- Sumners, E. M.**  
 Mosaic disease in Co. 281 cane. *Sugar Bull* **11**(23): 3-4, 1933.  
 (Facts About Sugar (Abstract **23**(10): 398, 1933).  
 Account of the occurrence of mosaic disease in Co. 281 cane in Louisiana.

**Sundaranaman, S.**

Mosaic disease of sugar cane in South India. Madras Agric. Dept. Bull. **92**: 5-13, 1928. (Rev. Appl. Mycol. **8**: 62, 1929.)  
The result of studies on resistant varieties.

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The "clump disease" of Ground-nuts. Madras Agric. Dept. Year Book, **1926**: 13-14, 1927.

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Administration Report of the Government Mycologist, Coimbatore, for 1928-29. (Reprinted from Rpt. Dept. Agric. Madras Presidency, for the official year **1928-29**, p. 27, 1929.) (Rev. Appl. Mycol. **9**(2): 87-88, 1930.)

Contains a record of sugar-cane varieties resistant to mosaic.

**Suzuki, U[metaro]**

Report on investigations on the mulberry-dwarf trouble, a disease widely spread in Japan. Imp. Univ. Tokyo, Coll. of Agric. Bull. **4**(3): 167-226, 1900.

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Chemische Physiologische Studien uber die Schrumpfkrankeheit des Maulberrbaumeseines in Japan sehr weit verbeitete Krankheit Ztschr. Pflanzenkrank. **12**: 203-226, 258-278, 1902.

**Swezy, Olive, & Severin, Henry H[erman] P[aul]**

A filterable (Rickettsia-like) microorganism from *Eutettix tenella* and the sugar beet, both infected with curly top. Phytopathology (Abstract) **19**(12): 1143, 1929.

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Factors influencing the minimum incubation periods of curly top in the beet leaf hopper. Phytopathology **20**(1): 93-100, 1930.

A study of the intestinal tract of *Eutettix tenellus*. Bacteria were found and evidence that the juice could be ejected from the oesophagus.

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**Severin, H[enry] H[erman] P[aul]**

A Rickettsia-like microorganism in *Eutettix tenellus* (Baker.) The carrier of curly top of sugar beets. Phytopathology **20**(2): 169-179, 1930.

The *E. tenellus* harbors two organisms which can not be separated on morphological grounds. One passes the filter and the other does not.

**Swieten, H. J.**

De tabaksteelt te Elst en omstreken in de Opper-Betuwe Tijdschrift ter bevordering van Nijverheid. Tweede reeks. **5**: 145-167, 1857.

**Szembel, S[tefan Ju]**

(A few notes on tomato diseases in the district of Astrakhan.)  
 Comment Inst. Astrochanensis ad defensionem plantarum **2**  
 (4) :32-34, 1930.

Brief notes on leaf curl, and mosaic are given; mosaic is transmitted according to the author's report by the mite *Tetranychus telarius*.

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 (Prevalence of the chief diseases of cultivated plants in the district of Astrakhan during the period 1926 to 1929.) Comment Inst. Astrachanensis ad defensionem plantarum, **2**(4) : 61-80, 1930.

Brief notes on degeneration diseases of potato.

**Takada, K[azuo]**

Studies in the stripe leaf disease of barley. Journ. Tokyo Nogyo Daigaku (Tokyo Agric. Eoli.) **2** : 1-87, 1927.

**Takahashi, W[illiam] N[oboru], & Rawlins T[homas] E[lsworth]**

Electrophoresis of tobacco mosaic virus. Hilgardia **4**(15) : 441-463, 1930. (Phytopathology **30**(10) : 855, 1930.)

The authors give a review of the literature bearing on this phase of the subject and the results of their own experiments which they summarize as follows: Unpurified tobacco mosaic virus migrated to the anode during electrophoresis between pH 4 and pH 9. No migration of the virus was detected between pH 3 & 1.2.

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 Method of determining shape of colloidal particles: application in study of tobacco mosaic virus. Proc. Expt. Biol. & Med. **30** : 155-157, 1932.

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 Rod-shaped particles in tobacco mosaic demonstrated by stream double refraction. Science **77**(1934) : 26-27, 1933.

The authors give more details of their method and technique used in the demonstration by means of stream double refraction that the particles in the tobacco-mosaic virus are rod-shaped.

-----, & -----  
 Stream double refraction exhibited by juice from both healthy and mosaic tobacco plants. Science n.s. **77**(1934) : 284, 1933.

Continuation of previous experiments. The observation of recent work showed that the juice from unfrozen healthy leaves exhibited marked stream double refraction. The phenomenon was not manifested by juice from unfrozen healthy tobacco leaves subjected to the treatment with safranin.

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Evidence regarding the shape of tobacco mosaic virus particle.  
Phytopathology (Abstract) **23**(1):34-35, 1933.

-----, & Christensen, Ralph J.

The virucidal action of high frequency sound radiation. Science N.S. **79**(2053):415-416, 1934.

The author describes the procedure they followed in testing the effect of high frequency sound radiation on mosaic-tobacco leaves. The results obtained indicate that the tobacco mosaic virus is inactivated by high frequency sound radiation.

**Takami, N.**

(Stunt disease of rice and *Nephotettix apicolis*.) Journ. Agric. Soc. Japan **241**:22-30, 1901.

**Takimoto, S.**

(On the mosaic disease of chinese cabbage and other crucifers.) Jap. Hort. **42**(6):5-7, 1930.

**Taubenhaus, J[acob] J[oseph]**

The disease of the sweet pea. Delaware Agric. Expt. Sta. Bull. **106**:93 p., 1914.

Reviews subject and gives first description of disease on sweet pea. Can be transmitted by needle puncture and aphids. Believes it is caused by bacteria or protozoa.

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Sweet pea diseases and their control. Trans. Mass. Hort. Soc. **1916 Rpt. 1**:131-143, 1916.

**Taylor, G. M.**

Degeneration of potatoes. Gard. Chron. **63**:13, 1918.  
Popular.

**Taylor, W[illiam] A[lton]**

The leaf-cut disorder of cotton seedlings. U.S.D.A. Ann. Rpt. **120 Br. of Plant Product. Rpt. for 1913 p. 16.** 1913.

**Tchirsch, A.**

Ueber Sereh, die wichtigste aller krankheiten des Zuckerrohres in Java Schwelz. Wochenschrift, f. Pharmazie **29**(6):47-52, 1891.

**Tedin, H.**

Bladrollsjuka hos potatis. (Leaf roll of potatoes.) Sveriges Utsädesf. Tidskr. **1913**:290-395, 1913.



**Tehon, Leon R[oy], & Stout, G[ibert] L[eonidas]**

Peach yellows in Illinois. Illinois State Nat. Hist. Surv. Bot. Cir. 1:23 p., 1929.

A report of survey work.

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 Observations on peach yellows in Illinois. Trans. Illinois State Hort. Soc. 1931. 75:183-195, 1932.

Some historical data in regard to that disease stating that reliable reports indicate that it was observed as early as 1889. Considerations are given as to the spread and possible insect vector (*Myzus persicae*).

**Tempany, H[arold]**

Annual Report of the Department of Agric. Mauritius. 1921, 1922.

Reports on mosaic present.

-----, **Earle, F[ranklin] S[umner], & Brandes E[lmer] W[alker]**

Mosaic disease in Natal. South African Sugar Journal 8:269-271, 1924.

These authors have written independently giving their views on the mosaic situation in Natal based on the reports of H. H. Storey.

**Teodoro, N. G., & Serrano, F[elicísimo] B.**

Abaca heart rot and bunchy-top disease and their control, *Heterodera radicum*. Philippine Agric. Rev. 19:243-247, 1926.

**Thatcher, R[oscoe] W[ilfred]**

Raspberry mosaic. New York (Geneva) Agric. Expt. Sta. Ann. Rpt. 1922, 41:51, 1923.

Brief notes.

**Thompson, H[arry] S[tephen]**

On the preventions of curl and dry-rot in potatoes. Journ. Royal Agric. Soc. England 6:161-174, 1845.

**Thornton, M. H., & Kraybill, H. R.**

Further studies on a noninfectious leaf-deforming principle from mosaic tomato plants. Phytopathology (Abstract) 24 (1):19, 1934.

**Thornberg, W[alter] S[trickland]**

Western tomato blight. Better Fruit 6:14, 1912.

**Trupp, T[homas] C[yril]**

The transmission of "Mosaic" disease in hops by means of grafting. *Ann. Appl. Biol.* **14**(2): 175-180, 1927.

A brief paper giving results of transmission by grafting.

**Thung, T. H.**

Physiologisch onderzoek met betrekking tot het virus der bla-drolziekte van de aardappelplant, *Solanum tuberosum* L. (Physiological investigations in relation to the virus of potato leaf-roll diseases. (With English Summary.) *Tijdschr. Plantenziekt.* **34**(1-2): 1-74, 1928.

Studies which lead the author to believe the excess of starch in leaf-roll potato plants is due to disturbed translocation and not to disturbed enzymatic activity.

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Over knolentingen die ter bestudeering der virusziekten van de aardappelplant worden mitgeverd. (On tuber-grafts made for studying potato virus diseases.) *Tijdschr. Plantenziekten.* **34**(7): 195-199, 1928.

The virus from a potato half tuber passed to a healthy half tuber without a union. The transmission is mechanical.

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Smetstof en plantencel by enkele virusziekten van de Tabak-plant. (Infectives principle and plant cell in some virus diseases of the tobacco plant.) *Handelingen ó de Nederl.—Ind. Nature wetensch. Congr.* 1931. p. 450-463, 1932.

The author separated the active agent of the white or whitish yellow mosaic and common mosaic from a tobacco plant infected with both. He believes the former which is sporadic in Java, to be the same as Johnson's and McKinney's yellow mosaic. He is of the opinion that tobacco-mosaic virus is not a living agent but a dead toxic substance normally in the plant. This is in accordance with the theory advanced by Hunger in 1905.

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De Kulr-an Kroepoek-Ziekten van Tabac en de corzaken van here verbreiding. (The curl and crinkle disease of tobacco and the causes of their dissemination.) *Proefstat. vors-ten-andsche Tobak. Meded.* **72**: 1-54, 1932.

A virus disease that can be transmitted by grafting and the white fly (*Bemisia sp.*) The disease has been transmitted to tomato, *N. glauca* and *N. rustica*.

Bestrijding der Kurl-en Kroepoek-ziekte van tabak. (The control of the curl-and crinkle diseases of tobacco.) Meded. Proefst. Vorstenl. Tabak Java **78**, 18 p. 1934. (English Summary p. 18.)

**Tice, C[ecil]**

Mosaic disease of potato. Agric. Journ. British Colombia. **7**: 77, 1922.

Leaf-roll disease of the irish potato. Agric. Journ. British Colombia. **7**: 10-11, 1922.

A popular discussion.

**Tiedjens, V. A.**

Yellow pickle in greenhouse cucumber. Massachusetts Agric. Expt. Sta. Bull. **225**, 8 p., 1925.

**Tilford, P[aul] E[dward]**

Potato Leaf-roll in Ohio. Ohio Agric. Expt. Sta. Bimonthly Bull. **11**(2): 55-59, 1926.

A general discussion and estimates of losses due to this disease.

Ohio potato disease. Ohio Agric. Expt. Sta. Bull. **432**. 38 p., 1929. (Rev. Appl. Mycol. **9**(1): 51. 1930.)

Brief notes. Popular.

**Tims, E[ugene] C[hapel], & Edgerton, C[laude] W[ilbur]**

Behavior of mosaic in certain sugar cane varieties in Louisiana. Amer. Journ. Bot. **18**(8): 649-657, 1931.

The field observations made by the authors led them to discuss the behavior of mosaic in certain sugar-cane varieties, mostly P. O. J. canes.

**Tisdale, W[illiam] B[urleigh]**

Tobacco disease investigations. Florida Sta. Rpt. **1922**: 128-139, 1922.

Plant pathology. Florida Agric. Expt. Sta. Rpt. **1929**: 68-81, 1929.

Record on spindle tuber of potatoes.

**Tolaas, A. G.**

The production of mosaic-free Triumphs. Amer. Potato Journ. **3**(9): 301-302, 1926.

Popular.

**Tollenaar, D[irk]**

Jaarverslag Mei 1928-30 April, 1929. (Annual report, 1st May, 1928 to 30th April, 1929.) Proefstat. Vorstenlandsche Tabak, Meded, **62**, 55 p., 1929. (Rev. Appl. Mycol. **9**(2):137-138, 1930.)

Contains some data on mosaic of tobacco.

**Tomei, B[ertani]**

Malattie delle Piante Erbacee. (Diseases of herbaceous plants.) Urbino, Italy p. 111, 1923.

**Tompkins, C[hristian] M[ilton]**

Effect of intermittent temperature on potato mosaic. Phytopathology (Abstract) **15**(1):46, 1925.

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Influence of the environment on potato mosaic symptoms. Phytopathology **16**(9):581-610, 1926.

This paper gives the results of much valuable data obtained from experimental work under control conditions. The greater part of the work has to do with temperature.

**Tower, W[inthrop] V[ose]**

Mottling disease of sugar cane. Porto Rico Agric. Expt. Sta. Ann. Rpt. **1919**:21-25, 1920.

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Report of the Entomologist. Porto Rico Sta. Rpt. **1921**:23-26, 1921.

**Townley, John**

The limited duration of varieties of potato, and progressive deterioration of the plant as a species, proved by a consideration of the curl, dry-rot, and other diseases. The diseases, Regeneration & Culture of the Potato. London, p. 67-85, 1847.

Of historical interest.

**Townsend, C[harles] O[rrin]**

Some diseases of sugar beet. U. S. D. A. Rpt. **72**:90-101, 1902.

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The curly top or western blight of the sugar beet. Science n.s. (Abstract) **23**(585):426-427, 1906.

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Curly-top, a disease of the sugar beet. U.S.D.A. Br. Plant Indus. Bull. **122**, 37 p., 1908.

Describes the symptoms and gives brief history. Gives a rather extensive discussion of possible causes.

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Sugar beet mosaic. *Science* n.s. **42**(1076) : 219-220, 1915. (*Phytopathology* (Abstract) **5**(4) : 282, 1915.)

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An immune variety of cane. *Science* n. s. **49**(1272) : 470-472, 1919. (*Louisiana Planter & Sugar Manuf.* **63**(3) : 42, 1919. *Sugar* **21** : 305, 392, 1919.)

A discussion of the immunity of Kavangire cane to mosaic.

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Disease immunity in beets. *Facts About Sugar* **22**(33) : 789, 1927.

Popular.

**Townsend, C[harles] H[enry] T[ylor]**

Notas sobre *Aphis maidis* (Notes on *Aphis maidis*.) *Estac. Expt. Agric. Soc. Agri.* (Perú) *Circ.* **5**. 10 p., 1928.

**Trabut**

Sur la chlorose infectieuse des citrus. (Infectious chlorosis of citrus.) *Compt. Rend. Acad. Sci. Paris.* **156** : 243-244, 1913.

**Traub, M.**

Onderzoekingen over serehziek suikerriet. *Meded. uit 'S Lande Plantentuin* **2**, 1885.

**Trochain, J.**

La lepre de l'arachide en Senegal. (Leprosy of ground nut in Senegal.) *Rev. de Bot. Appli. et d' Agri. Trop.* **11**(117) : 330-334, 1931.

**Trotter, Alessandro**

Nostre conoscenze sulle virosi del tabacco ed in particolare sul "mosaico". (Our knowledge on virosis of tobacco in particular to the "mosaic".) *Boll. Tecn. R. Inst. Sperim. per le Cultivazione del Tabacchi "Leonardo Angeloni" Scafati* **30**(2) : 81-104, 1933.

**Troude, M. J.**

La jaunisse de la betterave. (The yellows of the beet.) *La Sucrerie Indigée et Coloniale.* **48** : 338-340, 1896.

**True, R[odney] H[oward], Black, Otis Fisher, Kelly, James W[illiam] Bunzel, Herbert H[orace], Hawkins, Lon A[drian] Jodidi, Samuel Lee, & Kellogg, Edward H.**

Physiological studies of normal and blighted spinach. *Journ. Agric. Res.* **15**(7) : 369-408, 1918.

This general title includes four papers as follows: I. True, Black and Kelley. Ash content in normal and in blighted spinach. Gives the results of chemical studies. II. Bunnell, H. H. Oxidase reaction in healthy and in blighted spinach. A greater oxidase activity in diseased than in healthy plants but does not determine whether it is a cause or a symptom.

This is believed to be the same as rosette. The plants are dwarfed and sometimes completely sterile. III. True and Hawkins: Carbohydrate production in healthy and in blighted spinach. Carbohydrate accumulation greater in diseased than in healthy plants. IV. Jodidi, Kellogg and True: Nitrogen metabolism in normal and in blighted spinach. Gives the results of studies made to determine reasons for the results obtained in paper No. III.

-----, & Hawkins, Lon A[drian]

Carbohydrate production in healthy and blighted spinach.  
Journ. Agric. Res. 15:381-384, 1918.

**Tsen-Cheng.**

Sur les modifications histologiques constatées chez la pomme de terre. (*Solanum tuberosum*) atteinte de dégénérescence (Maladie de l' enroulement.) (Histologic modifications of potatoes attacked by leaf roll.) Compt. Rend. Sci. (Paris) 186(8) : 524-526, 1928.

Histological studies on the leaves.

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Sur les phénomènes de nécrose dans la pomme de terre atteinte de la maladie de l' enroulement. (Necrosis in potatoes attacked by leaf roll.) Compt. Rend. Acad. Sci. (Paris) 186 (11) : 712-714, 1928.

The author discusses the process of phloem necrosis in diseased plants.

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Recherches sur la maladie de dégénérescence (enroulement) chez *Solanum tuberosum*. (Researches on leaf roll disease of potato. *Solanum tuberosum*. 103 p., Jouve édit., 15 me Racine: Paris. Thèse, Fac. Sci. Paris. 111 p., 1929.)

**Tsienien, S. J.**

Recherches sur l' histologie des plantes panachées et sur le mecanisme cytologique de la panachure. (Investigations on the histology of variegated plants and the cytological mechanism of the variegation.) Thesis. Fact. Sci. Nancy (France) 104 p., n.d.

**Tsuji, R.**

(The curly dwarf of potato.) Horticulture 11:35-39, 1919.

**Turner, W[illiam] F.**

Progress in phony peach disease eradication. Journ. Econ. Entom. **26**(3): 659-667, 1933.

Report of work done.

**Unite, J[uan] O., & Capinpin, J[osé] M[ananjaya]**

Selection of mosaic-free cuttings of sugar cane. Philippine Agric. **15**(2): 67-73, 1926. (The Planter & Sugar Manuf. **77**(8): 147-148, 1926.)

**Uphof, J[ohannes] C[ornelis] T[heodorus]**

Eine neue Krankheit von *Cephalanthus occidentalis*. (A new disease of *Cephalanthus occidentalis*.) Zeitschr. für Pflanzenkr. **31**(3-4): 100-108, 1921.

**Uppal, B[adri] N[ath]**

India: mosaic disease of chillies (*Capsicum annum.*) in the Bombay Presidency. Internat. Bull. of Plant Protec. **3**(7): 99, 1929. (Rev. Appl. Mycol. **9**(1): 10, 1930. Int. Anz. Pflanzenschutz **3**: 103, 1929.)

A record of heavy losses.

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India: A new virus disease of *Dolichos biflorus*. Internat. Bull. Plant Proct. **5**(9): 163, 1931.

A disease very similar to mosaic of beans occur on *Dolichos biflorum* and *D. lablab*.

**Utra, Gustavo d'**

A molestia do "mosaico" de fumo (Mosaic disease of tobacco) Bol. Agric. Sao Paulo (Brasil) **5**(2): 51-71, 1904.

**Uzel, H[einrich]**

Mitteilung über Krankheiten und Feinde der Zuckerrübe in Böhmen in Jahre. 1907 und der mit derselben abwechselnd pultivierten Pflanzen. Zeitschr. f. zuckerindus. in Böhmen **33**: 357, 1909. (Rev. Centralbl. f. Bakt. **24**; 207-271, 1909.)

**Valeton, T.**

Bijdrage tot de kennis der serehziekte. Proefst. Oost-Java, Batavia p. 307-338, 1891.

**Valle Zeno, Rafael del**

Mottling or yellow stripe disease of sugar cane. Some facts relative to the importance of the discovery of the "morbid" cause. Published privately with 2 color plates by author, New York, 1919.

Gives symptoms and effect of the disease. Claims to have discovered the great secrets of cause and control.

**Valleau, W[illiam] D[orney], & Johnson, E[dward] M[arshall]**

The relation of nitrates to tobacco frenching. *Science. n.s.* **64**: 278-279, 1926.

Frenching which was for a time considered the same as mosaic is caused by soil conditions. It is not infectious.

-----, & -----

Commercial tobacco and cured leaf as a source of mosaic disease in tobacco. *Phytopathology* **17**(8):513-522, 1927. (*Trop. Agric. (Trinidad)* **4**:135, 1127.)

The virus from dry tobacco 16-31 years old was active when inoculated into growing plants. The disease was reduced by having the laborers use steam sterilized tobacco.

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The effect of a strain of tobacco on the yield and quality of burley leaf tobacco. *Phytopathology* **17**(8):523-528, 1927.

Losses due to the disease. The author reports two types of mosaic and gives the results of field studies on losses.

-----, & -----

Tobacco frenching—A nitrogen deficiency disease. *Kentucky Agric. Expt. Sta. Bull.* **281**, 1927.

This disease is frequently mistaken for mosaic.

-----, & -----

Observations and experiments on the control of true tobacco mosaic. *Kentucky Agric. Expt. Sta. Bull.* **280**:145-174, 1927.

The disease is found in the seed beds. It overwinter in horsenettles, ground cherries and in cured tobacco. It is transmitted by the men chewing diseased tobacco and spitting in the seed beds.

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Some virus diseases of tobacco in Kentucky. *Phytopathology (Abstract)* **18**(1):132-133, 1928.

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Weed control and the potato virus problem. *Amer. Potato Journ.* **5**(9):257-259, 1928.

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Experiments and observations on the control of true tobacco mosaic. *Phytopathology (Abstract)* **18**(1):132, 1928.

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Peach yellows and potatoes. *Plant Disease Reporter* **12**(9):102-103, 1928.

Brief mimeograph note giving the relation of peach yellows and potato virus diseases.



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Tobacco mosaic control in Mexico. *Phytopathology* **19**(9): 880, 1929.

The author believes that bulk heating inactivates the virus.

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The viruses concerned in rugose mosaic of Irish Cobbler potatoes and the weed host problem. *Phytopathology* (Abstract) **20**(1):135, 1930.

-----, & Johnson, E[dward] M[arshall]  
The relation of some tobacco viruses to potato degeneration. *Kentucky Agric. Expt. Sta. Bull.* **309**:475-507, 1930.

The authors give the result of a large number of inoculations and descriptions of the symptoms of virus disease which may be summarized as follows: 1.—A description of a tobacco disease called veinbanding. 2.—Irish Cobbler potato plants healthy or diseased, appear to always possess a virus which produces necrotic and chlorotic ring and line patterns, in tobacco. 3.—The mosaic virus and interveinal mosaic virus from Irish Cobbler potatoes, and rugose mosaic virus from Green mountain potatoes produces spot necrosis in tobacco. 4.—A mixture of healthy potato and veinbanding viruses produced a spot necrosis in tobacco which is the same as that produced by the rugose mosaic virus of potatoes. 5.—Cucumber mosaic virus causes a mosaic in potatoes. There appears to be three strains. 6.—Ringspot virus of tobacco is different from the necrotic ring produced by healthy potato virus. 7.—Three strains of each virus produce a rugose mosaic. 8.—Viruses from weeds appear to be important factors. 9.—*Myzus persicae* rarely if ever transmitted healthy potato virus.

-----, & -----  
Some possible causes of streak in tomatoes. *Phytopathology* **20**(10): 831-839, 1930.

A study of tomato streak and tobacco mosaic diseases.

-----, & -----  
The viruses concerned in a natural epiphytotic of streak in tomatoes. *Phytopathology* **21**(11):1087-1089, 1931.

A brief paper on an outbreak of tomato streak in the greenhouse. The author concludes experiments which demonstrated that the streak in tomatoes and necrotic mosaic in tobacco resulted from a mixture of tobacco and potato.

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A virus disease of plum and peach. *Kentucky Agric. Expt. Sta. Bull.* **327**: 89-123, 1932.

The author describes and discusses a virus disease of plum and peach. Gives the history of the disease, budding experiments, discusses the patterns and plum virus; spread of the virus budded trees and the spread of similar virus diseases of the apple and rose. At the end gives suggestions for eradication of the virus.

Seed transmission and sterility studies of two strains of tobacco ringspot. Kentucky Agric. Expt. Sta. Bull. 327: 43-80, 1932.

The most severe disease in Kentucky. There are two types, the green and the yellow. The yellow is distinct from the Aucuba mosaic of potato. Both are carried in the seed. Ring-spot has been reported on Jimson, cantaloupe. Petunia, sweet clover, *Physalis* sp., *Solanum carolinenses* and cucumber. The pods produce a small number of seed and the pollen grains are smaller than normal.

A virus disease of *Delphinium* and tobacco. Kentucky Agric. Expt. Sta. Res. Bull. 327: 81-88, 1932.

The author reports a virus disease on the garden varieties of *Delphinium* transferable to tobacco. He also states that the virus under study appears to affect plants in 3 families, *Ranunculaceae*, *Solanaceae* and *Cucurbitaceae* and in 2 orders; *Ranunculales* and *Campanulales* of the flowering plants.

Two seed-transmitted ring-spot diseases of tobacco. Phytopathology 22(1): 29, 1932.

Two ring-spot diseases, (a) green patterns, (b) green & yellow. Both are transmitted by the seed.

., & Johnson, E[dward] M[arshall]

Tobacco diseases in Kentucky. Kentucky Agric. Expt. Sta. Bull. 328: 109-154, 1932.

A popular publication giving descriptions of the common diseases, including the most common virus diseases.

**Vanha, J. V.**

Die Krausel-oder Hollkrankheit der Kartoffel, ihre Ursache und Bekämpfung. Monatshefte für Landwirtschaft, Jahrg. 3(9): 268, 1910.

**Venkata Rao, M. G.**

A preliminary note on the leaf curl mosaic disease of Sandal. Indian Forester 49(12): 772-777, 1933.

Description of this new disease of *Santalum album* reported from Mysore (India) which the author named "leaf-curl mosaic". Transmissibility studies were conducted which the author describes. The author found that leaf-curl mosaic spreads more rapidly than spike.

**Vanterpool, T[homas] C[lifford]**

The stripe or streak disease of tomato in Quebec. Quebec Soc. Protect. Plants. Ann. Rpt. 1923-24, 16: 116-123, 1924.

A description of the disease.

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Streak or winter blight of tomato in Quebec. *Phytopathology* 16(5) : 311-331, 1926.

A report of studies which show that this disease is caused by a virus.

**Varadaraja Iyengar, A. V.**

Contribution to the study of spike-disease of sandal (*Santalum album* Linn). II Journ. Indian Inst. Sci. Ser A. 11 : 97-109, 1928.

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Contribution to the study of spike-disease of sandal (*Santalum album* L.). Part XV. The role of plant acids in health and disease. (n. d.).

Leaves from healthy plants contain more malic and oxalic acids than those from diseased plants. The reverse is true for succinic acid. The diseased plants contain more phosphates than the healthy plants. Carbon dioxide production is greater for diseased than healthy plants. The reverse is true for shoots that have been cut from the plant.

**Vasters, J.**

Untersuchungen über Blattroll- und mosaikkrankheit der Kartoffel. (Investigations on leaf roll and mosaic disease of potatoes. *Pflanzenban*, 4 : 211-214, 1928.

**Vaughan, E. K.**

Transmission of the crinkle disease of strawberry. *Phytopathology* 23(9) : 738-740, 1933.

Report of studies of the Oregon Agricultural Experiment Station to determine the nature of the infective principle in strawberry crinkle and its mode of transmission.

**Vélez, Ramón**

El mosaico del tabaco (Tobacco Mosaic). *Rev. Agric. Puerto Rico*. 10 : 25-26, 1923.

A brief popular discussion.

**Venkatarama, Ayyar, K. R.**

Is spike disease of sandal (*Santalum album*) due to an unbalanced circulation of sap? *Indian Forester* 44 : 316-324, 1918.

A criticism of Hole's paper in *Indian Forester* 43 : 430-443 (1917). Gives evidence that the disease is not caused by fire and not due to unbalanced circulation of sap.

**Venkatraman, T. S.**

Report of the Government Sugar-Cane Expt. Sta. *Sci. Rpt. Agric. Res. Inst. Pusa* 1924-25 : 142-151, 1925. (*Rev. Appl. Mycol.* 5 : 251, 1925.)

Mosaic of sugar cane may have been present in India for some time without being recognized.

-----, & Thomas, R.

A leaf adaptation conducive to mosaic resistance in the sugar cane. *Agric. Journ. India.* **23**(1): 56-57, 1928.

The authors advance the theory that numerous trichomes which protect the leaves from the insect vectors are factors in resistance.

Verhoeven, W[ilhelm] B[oudewijn] L[eenwenburg]

Plantenkieften, waarmede rekening moet worden gehouden bij de veldkeuring. (Plant diseases which should be considered in field inspections.) *Tijdschr. Plantenz.* **26**: 149-159, 1920.

Verplancke, G[ermain]

A propos des maladies de dégénéscence de la pomme de terre. (About the disease of degeneration of the potato.) *Ann. Gembloux, Brussel* **33**: 443-449, 1927.

-----  
 Quelques données nouvelles sur les maladies á virus filtrants. (Some new data about the filterable virus diseases.) *Ann. Gembloux, Brussel* **34**: 121-135, 1928.

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 Les maladies á virus filtrants de la Betterave. (Beet disease caused by filterable viruses.) *La Sucrerie Belge* **49**(7): 121-127, 1929. (*Rev. Appl. Mycol.* **9**: 355, 1930.)

List of three virus diseases of sugar beet. 1.—Curly top carried by *Eutettix tenella*. 2.—A similar disease in Czechoslovakia which is supposed to be transmitted by *Cicadula sexnotata* and 3.—A similar disease in Belgium which is supposed to be transmitted by *Myzus persicae*.

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 Une maladie á virus filtrant des *Anthurium*. (A filterable virus disease of *Anthurium*). *Comptes Rendus Soc. de Biol.* **103**(7): 524-526, 1930. (*Rev. Appl. Mycol.* **9**: 388, 1930. *Soc. Bot. France, Ann. Bull.* **1930**: 246).

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 Contribution á l' étude histologique et cytologique d' une maladie de la pomme de terre, appelée en Amérique "spindle tuber." (Contribution to the histological and cytological study of a disease of the potato called spindle tuber in America.) *Acad. Roy. Belgique C., Sci. Mém. Coll. in* **8**, **11**: 1-42, 1930.

The nuclei are sometimes lobed and sometimes contain more than one nucleolus. X-bodies and striated material were present.

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Etude histologique et cytologique des parties aeriennes de la pomme de terre atteinte de spindle tuber. (An histological and cytological study of the aerial parts of the potato attacked by spindle tuber.) Bull. Soc. Roy. Bot. de Belg. **64** (1) : 128-176, 1931.)

The author continues studies which he started in the United States. He found a modification of the tissue of the aerial parts of the diseased plants.

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Les maladies de dégénérescence de la pomme de terre. Journ. Soc. Centr. Agr. Belgique **11**(6) : 138-170, 1931.

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Etude histologique comparée de tubercules sains, allongés et normaux et de tubercules atteints de "Spindle tuber". (Comparative histological studies of sound elongated and normal tubers and those attacked by the "spindle tuber". La Sucrerie Belge **49**(7) : 121-127, 1931. (Bull. Soc. Roy. Belge **63**(2) : 138-148, 1931.)

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Experiences sur la transmission des maladies dégénérescences de la pomme de terre. Ann. Gembloux **37**(2) : 65-69, 1931. (11) : 345-349, 1144-1146, 1932.

This paper gives the results of transmission studies.

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Etude histologique comparée de tubercules sains, allongée et normaux et de tubercules atteints de "spindle tuber". Bull. Soc. Roy. Bot. Belg. **63**(2) : 138-144, 1931.

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Une maladie à virus filtrant de *Pelargonium Zonale*. (A disease of *Pelargonium Zonale* due to a filterable virus.) Bull. Ce. Sci. Acad. Roy. de Belgique, Ser. 5. Vol. **18**(3) : 269-281, 1932.

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Experiences sur la transmission des maladies de dégénérescence de la pomme de terre. (Experiences on the transmission of the diseases of the degeneration of the potato.) Ann. Gembloux **39**(1) : 12-23, 1933.

Description of result obtained in experiments on virus diseases of potatoes.

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Hotes nouveaux des maladies & virus filtrants de la Betterave.  
(New hosts of the beetroot diseases due to filterable viruses.)  
Bull. Soc. Roy. Bot. Belg. ser. 2 15(2) : 137-147, 1933.

Report of the author's cross-inoculation experiments with yellows and mosaic viruses of beet on 60 plants, most of which are common weeds.

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Étude comparative de pommes de terre d'origines diverses. II.  
Résultats des expériences faites en 1932. (Comparative studies of potatoes of different origins. II. Results of Experiments done in 1932.) Bull. Inst. Agron. & Stat. Rech. de Gembloux 2(1) : 45-73, 1933.

The degeneration diseases present were leaf roll, mottling, mild mosaic, rugose mosaic, erinkle mosaic, aucuba mosaic and streak. Results of studies are given in full details and tabular form.

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Les viroses de la betterave. (The viroses of the beet.) Sucrierie Belge, 53(1) : 2-10, 1933.

**Verret, J. A., & Verret, D. F. C.**

Losses caused by mosaic in H-109 plant cane. The Hawaiian Plant. Rec. 33(3) : 362, 1926.

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Losses from mosaic. Kohala Sugar Co. Expt. No. 1. Hawaii Plant. Rec. 31 : 244-245, 1927.

**Verteuil, J[oseph de], & Brunton, L. A.**

Sugar cane experiment 1919-1922. Trinidad & Tobago Dept. Agric. Bull. 19(4) : 188-214; 20(2-4) : 65-109. 1922.

**Verwoerd, Len**

Two diseases of the tomato mosaic and early blight. Farming So. Africa, 3 : 1167-1169, 1928.

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On two cases of recovery from a mosaic disease tomato plants *Lycopersicum esculentum*. Ann. Appl. Biol. 16(1) : 34-39, 1929.

Six cuttings from a diseased plant were rooted. Two of them did not develop symptom and the juice from them did not cause the disease in other plants.

**Veve, Rafael A.**

The eradication of sugar cane mosaic in Fajardo. Puerto Rico Ins. Expt. Sta.. Circ. 33 : 52-55, 1920.

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La represión del matizado en Fajardo. (Mosaic eradication in Fajardo.) Rev. Azucarera & Agric. Puerto Rico 1:96-98, 1921.

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The efficiency of "roguing" method for the eradication of mottling disease. Louisiana Planter 69(2):30, 1922.

The disease was reduced from 0.5 to 0.002%. Believes that roguing can be practiced where the percentage of disease is less than 15%.

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Cane mottling eradication. Facts About Sugar 15(4):78, 1922.  
See preceding annotation.

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Overcoming the mosaic disease at Fajardo. Facts About Sugar 18(20):468, 1924.

Mosaic has been overcome by roguing.

#### Vibert

Observations relatives a L' influence qu' exerce la greffe sur le sujet. (Observations about the influence that the graft exercise on the stock.) Journ. Soc. Imp. & Cent. Hort. (France) 9:144-145, 1863.

In this paper the author demonstrates the transmissibility of rose mosaic.

#### Vidal, L. F.

El mosaico de la caña de azúcar. (Mosaic of sugar Cane.) Tipografía Cervantes, San P. de Macorís, Dominican Rep. 44 p. (Facts About Sugar 26:503, 1931.)

A popular textbook.

#### Villamin, V.

Mosaic-immune variety of sugar-cane. Sugar 5:345, 1923.

#### Villillo, G.

(Filterable virus) Ztschr. Infektionskrank, u. Hyg. Haustiers, 9(6):433-479, 1911.

#### Vincent, C[hester] L[eon]

Potato breeding problems. Proc. 16th Ann. Meeting Potato Assoc. America. 1929-30:63-69, 1930. (Rev. Appl. Mycol. 9:550, 1930.)

Results of efforts to develop a variety free from mosaic.

#### Vinson, C[arl] G[eorge]

Precipitation of the virus of tobacco mosaic. Science n.s. 66 (1711):357-358, 1927.

-----, & Petre, A[ndrew] W[illiam]

Mosaic disease of tobacco. 1—Progress in freeing the virus of accompanying solids. *Bot. Gaz.* **87**(1): 14–38, 1929. (Contr. Boyce Thompson Inst. **1**: 479–503, 1929.)

This paper gives the results of experimental work for the purpose of freeing the active agent from all other material. The authors report that the virus is precipitated by an aqueous solution of safranin.

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Progress in freeing the virus of mosaic disease of tobacco from accompanying solids. *Phytopathology (Abstract)* **19**(1): 107–108, 1929.

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Mosaic disease of tobacco. II. Activity of the virus precipitation by lead acetate. *Contr. Boyce Thompson Inst.* **3**(1): 131–146, 1931.

The author describes a new method and gives the results of experimental work.

-----, & Gildeham, Edgar J.

Comparison of juice from diseased and healthy tobacco plants. *Phytopathology (Abstract)* **22**(1): 29, 1932.

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Decomposition of the safranin precipitate of mosaic virus of tobacco. *Phytopathology (Abstract)* **22**(1): 29, 1932.

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Mosaic diseases of tobacco: 5—Decomposition of the safranin-virus precipitate. *Phytopathology* **22**(12): 965–975, 1932.

This paper gives the results of experimental studies for securing a rapid method for the purification of virus preparation.

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Virus diseases of plants. *Missouri Agric. Expt. Sta. Bull.* **310**: 41, 1932.

Brief notes on experimental work in progress to determine the nature of the virus of solanaceous plants.

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Further purification of the virus of tobacco mosaic. *Phytopathology (Abstract)* **23**(1): 35, 1933.

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Purification of the virus of tobacco mosaic. *Phytopathology (Abstract)* **24**(1): 20, 1934.

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Possible chemical nature of tobacco mosaic virus. *Science n.s.* **79**(2059): 548–549, 1934.



Brief article, discussing, Lojkin and Vinson, Barton-Wright and Mc Bain, and Caldwell's previous work on the subject. Comparison of results obtained under each condition.

**Vochting, Hermann von**

Ueber die keimung der kartoffelknollen. Bot. Ztg. 1, 60: 87-114, 1902.

**Vogel, Irving Henry**

Leaf-roll and mosaic of potatoes. Proc. New York State Potato Assoc. p. 21-24, 1918.

**Voges, E[rnst]**

(The history of potato leaf-roll.) Fühling's Landw. Ztg. 61 (16): 542-552, 1912.

**Volk, A[lfred]**

Das diesjährige starke Auftreten des Mosaikkkrankheit (Gelbflegheit) des Sinates. (The current year's widespread occurrence of mosaic disease (Yellow spotting) of spinach.) Inst. für Pflanzenkrankh. der Landw. Hochschule. Bonn. Poppelsdorf. 3 p., 1929. (Rev. Appl. Mycol. 9: 428, 1930.)

A severe outbreak of mosaic on spinach. The disease is transmitted by *Macrosiphum pisi*, *Aphis fabae*, (*A. runisit*) *Myzoides* (*Myzus*) *persicae*.)

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Einflüsse des Bodens, der Luft des Lichtes auf die Empfänglichkeit der Pflanzen für krankheiten. Phytopath. Zietschrift. 3(1): 9-16, 1931.

**Volkart, A[lbert]**

Abvan und Viruskrankheiten. (Degeneration and virus diseases.) Land. Vorträge 55 p., 1933.

Discussion of the ecological theory of degeneration of potato with special reference to H. Morstatt, Merkenschlager and other hypothesis. The author declares that potato degeneration as observed in Switzerland is entirely to be attributed to the influence of virus diseases.

**Wager, V. A.**

Tomato diseases. 1—Leaf spot; 2—Blossom rot, 3—Mosaic, 4—Canker of bacterial spot, 5—Bacterial wilt. Farming So. Africa, 2: 133-136, 185-190, 235, 289-290, 1927; 2: 601-602, 1928.

**Wagner, M.**

Variétés de Pomme de terre susceptibles d'être cultivés avec succès en des altitudes entre 1,000 et 2,000 metres. (Potato

varieties susceptible of being cultivated with success at an altitude between 1,000 and 2,000 meters.) *Comptes Rendus Acad-Agric. France* 15(21) : 763-765, 1929.

**Wahl, B[runo]**

Bericht über die Tätigkeit der Budensanstalt für Pflanzenschutz in Wien in den Jahren 1921 bis 1923. (Report on the Federal Institute for Plant Protection in Vienna during the year 1921 to 1923.) *Ztchrs. Landw. Ver. in Deutsch-Ostr.* p. 48, 1924.

**Waite, M[erton] B.**

Peach yellows and frost injury. *Science n.s.* 31(803) : 798-799, 1910.

Brief but very comprehensive note defining these two troubles of frequent confusions.

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The peach yellows group of peach disease. *Calif. Dept. Agr. Mo. Bull.* 19(7) : 484-488, 1930.

Brief popular description of peach yellows, peach rosette, little peach and phony peach disease.

**Wakefield, E[lsie] M[aud]**

Mosaic disease of cane. *Sugar*, 23 : 500-501, 1921.

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Mosaic disease of plants. *West Indian Bull.* 18 : 197-206, 1921.

**Wakker, Jan H[endrik]**

Gele Strepentziekte. (Yellow stripe disease.) *Archief voor de Java Suikerind*, 1 : 4, 1894.

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Die indirecte Bekämpfung der Serehkrankheit des Zuckerrohres auf Java. 66 : 1-7, 1896.

-----, & **Went, F[riedrich] A[ugust] F[erdinand] C[hristian]**

(A review of the diseases of the sugar-cane in Java, I.) *Med. Proefsta. East Java. N. Ser. No.* 22, p. 11, 1896.

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De Ziekten van het Suikerriet op Java. (Sugar cane disease in Java.) *Leiden.* p. 166-169, 1898.

**Walbach, S[imeon] B[urt]**

The filterable virus summary. *Journ. Med. Res.* 27(1) : 1-25, 1912.

**Waldmann, O. Pyl, G.**

Über unsichtbare krankheitserreger. 1—Der Stand der Virusforschung. 2—Über die möglichkeit einer chemischen Bearbeitung des Virus problems. 3—Die Kunstliche Vermehrung netravistibler Krankheitserreger. *Naturwissenschaften* **20**: 129-134, 150-153, 1932.

**Walker, M[arion] N[ewman]**

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 A comparative study of the mosaic disease of cucumber. Tomato and *Physalis*. *Phytopathology* **16**(7): 431-458, 1926.

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**-----, & Stahl, C[orwin] F[loyd]**

Certain grass hosts of the corn aphid considered in relation to their occurrence in Cuba. *Trop. Plant Res. Foundation Bull.* **5**: 3-14, 1926. (*Rev. Appl. Mycol.* **5**: 318, 1926. *Rev. Appl. Ent. Ser. A.* **15**: 379, 1926.)

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**Walker, M. N.**

Occurrence of watermelon mosaic. *Phytopathology* **23**(9): 741-744, 1933.

Report of the occurrence of watermelon mosaic in Florida. The writer gives a description of the disease and its behaviour. *Aphis gossypii* appears to be the possible insect vector. This is apparently the first record of the spontaneous occurrence of mosaic in watermelons.

**Wallace, G. B.**

Report of the Mycologist. Tanganyika Territory Dept. Agr. Ann. Rpt. 1932: 76-80, 1933.

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**Wallman, F.**

Bacteriophage et processus similaires mosaïque des plantes. (Bacteriophage and similar processes mosaic diseases of plants.) Bull. Inst. Pasteur 26(1): 1-14, 1928.

**Wann, F[rank] B[urkett]**

Chlorosis yellowing of plants; cause and control. Utah Expt. Sta. Circ. 85, 11 p. 1930.

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Witches' broom on the locust. Plant World 1: 83-84, 1898.

**Watson, H. E. et al**

Proceedings of the conference on the spike-disease of sandal held at 11 A. M. on Monday, the 7th July, 1930 at the Indian Institute of Science, Bangalore, Indian Forester 57(5): 215-233, 1931.

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**Watt, R. D., Goddard, E. J., & Osborn, J. G. B.**

Investigations of "bunchy top" disease of bananas. Queensland Agric. Journ. 21(4): 263-275, 1924.

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**Waugh, John G., & Vinson, Carl G[eorge]**

Particle size of the virus of tobacco in purified solutions. Phytopathology (Abstract) 22(1): 29, 1932.

**Webb, R[obert] W[illiam], Leighty, C[lyde Evert], Dungan G[eorge] H[arlan], & Kendrick J[ames] B[lain]**

Varietal resistance in winter wheat to the rosette disease. Journ. Agric. Res. 26(6): 261-270, 1923.

The results of studies showing that this disease can be controlled by the use of resistant varieties.

Certain factors influencing the development of the mosaic disease of winter wheat. *Phytopathology (Abstract)* **17**(1): 41, 1927.

Soil factors influencing the development of the mosaic disease in winter wheat. *Journ. Agric. Res.* **35**(7): 587-614, 1927.

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Further studies on the soil relationships of the mosaic disease of winter wheat. *Journ. Agric. Res.* **36**(1): 53-76, 1928.

This paper gives the results of studies showing that the active agents exist in the soil.

**Weber, G[eorge] F[rederick]**

Mosaic disease of sweet potato. *Phytopathology (Abstract)* **13**(1): 42-43, 1923.

....., & **West, E[rdman]**

Diseases of sweet potatoes in Florida. *Florida Agric. Expt. Sta. Bull.* **212**, 40 p., 1930.

Popular notes given sweet potato mosaic diseases.

Mosaic disease of vegetable plants. *Florida Agric. Expt. Sta. Press. Bull.* **446**, 2 p., 1932.

Popular.

**Wedkeworth, H[erman] H[amilton], & Anders, C. B.**

Value of certified Irish potato seed in Mississippi. (*Mosaic*) *Mississippi Agric. Expt. Sta. Circ.* **60**, 4 p., 1925.

Popular, contains data on yield.

Effect of mosaic on sweet potato yields. *Missouri State Plant Bd. Quart. Bull.* **6**(3): 11-12, 1926.

Degeneration diseases of the Irish potato in Mississippi. *Mississippi Agric. Expt. Sta. Bull.* **258**. 11 p. 1928.

The author gives a description of mosaic, leafroll and spindle tuber. Also the effects on production and method of control by the use of certified seed.

**Weimer, J[ames] L[e Roy]**

Further evidence of the non-transmissibility of the so-called sweet potato mosaic. *Phytopathology (Abstract)* **16(1):74**, 1926.

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Alfalfa mosaic. *Phytopathology (Abstract)* **21(1):122-123**, 1931.

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Studies on alfalfa mosaic. *Phytopathology* **24(3):239-247**, 1934.

Description of a transmissible virus disease of alfalfa, of the mosaic type. The insect vector used in transmitting the disease was the pea aphid.

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A summary of the important contributions to potato pathology, which have appeared in foreign periodical literature in the past year. *Potato Assn. Amer. Proc.* **14:215, 218-225**, 1927.

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Pacific Coast survey for rose mosaic. *U.S.D.A. Plant Disease Reporter* **14(20):203-205**, 1930. (Mimeographed).

**Wellensiek, S[usan] J[acobus]**

Met een Hollandew samenvatting de physiologie der knolvorming bij de aardapple. (The physiology of tuber-formation in the potato plant.) Overgedrukt uit de Mededeelingen van de Land Bouwhoogeschool. Deel **33**, 1929.

The author planted tubers in wet sand and kept them in the dark. The sprouts were removed as soon as formed. The author describes seven types of tuber formation as follows,—(1) Normal tuber-formation,—(2) aerial tuber-formation,—(3) tuber formation during storage in the light,—(4) tuber formation during the storage in the dark,—(5) tuber-formation on dried mother tubers,—(6) premature tuber-formation after planting,—(7) Oortwijn Botje's case of tuber-formation are compared as to their mode of origin, they all can be ascribed to an increase of the concentration of food-substances. However, this increase may be directly due to photosynthesis (above types 1, 2, and perhaps 3), indirect absolute due to loss of water (types 4, 5 and 6, probably also type 3) or indirect relatively due to loss of a certain substance (type 7).

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De invloed van poottijd en rijafstand op de verspreiding van Aardappelvirozen. (The influence of planting time and row distance on the spread of potato viruses.) *Landbonwkundig*

Tijdschr., 41(497): 641-648, 1929. (Rev. Appl. Mycol. 9: 331, 1930.)

The results are tabulated and gives much valuable information.

**Wallington, R[ichard]**

Degeneracy of the potato. Rpt. Second, Ann. Meeting Minnesota Potato Growers Ass'n, 1917.

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The uselessness of hill selection under conditions where rapid degeneration or running-out is prevalent. Proc. Amer. Sci. 1919: 175-179, 1920.

**Wellman, F. L.**

Control of celery mosaic by eradicating of the wild host *Commelina nudiflora*. Phytopathology, 22(1): 30, 1932. Science 76: 390-391, 1932.)

The disease is not carried in the seeds but persists in *C. nudiflora*. The vector is *Aphis gossypii*.

**Wennink, C. S.**

De gevolgen der bladrolziekte bij aardappelen. (Control of leaf-roll of potatoes.) Tijdschr. Plantenz. 24(1): 1-4, 1918.

The results of experiments which support Quanjier's statement that disease-free potatoes can be produced by seed selections and growing in non-infested soil.

**Went, F[riedrich] A[ugust] F[erdinand] C[hristian]**

De serehziekte. Arch. Java-Suikerind. 1: 425-472, 1893.

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De serehziekte. In Wakker en Went. De ziekten van het Suikerriet of Java p. 76-98, 1898.

**Werner, H[arvey] O[scar], & Howard R[obert] F[rancis]**

Seed potato investigations. Nebraska Agric. Expt. Sta. Res. Bull. 24, 58 p., 1923.

Field studies on the effects of degeneration diseases and methods of control.

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Spindle-tuber, the cause of "run out" potatoes. Nebraska Potato Imp. Assoc. Ann. Rpt. 6: 57-79, 1924.

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Relation of environment to spindle-tuber symptoms. Proc. 1924 Ann. Meeting Potato Ass'n Amer. 11: 102-106, 1925.

A discussion of facts brought out as a result of field experiments.

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The spindle-tuber disease. On cause of "run-out" of seed potatoes. Nebraska Agric. Expt. Sta. Bull. 207, 21 p., 1925.

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The spindle-tuber disease as a factor in seed potato production. Nebraska Agric. Expt. Sta. Res. Bull. 32: 4-128, 1926.

A very extensive paper giving symptoms, commercial consideration, geographical distribution, influence of environment and transmission.

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Relation of time of roguing to the spread of spindle tuber in seed potato plants. Phytopathology 19(11): 1045-1049, 1929. (Rev. Appl. Mycol. 9: 263, 1930.)

A discussion of control by roguing.

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Effect of variable conditions within a field containing spindle tuber plants upon the seed value of the potatoes produced. Amer. Potato Journ. 6(6): 168-170, 1929.

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Zur Klimatologie, Pflanzengeographie und Geschichte des Europäischen Ackerbanes. (On the climatology, plant geography and history of european agriculture.) Ber. d. Deutsch. Bot. Gesell, 47: 34, 1929.

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Viability and composition of "seed" potatoes as affected by climatic conditions and by various other factors. Journ. Amer. Soc. Agron. 19: 761-780, 1927.

This paper contains some data on the "running out" or "deterioration" of potatoes.

### Westerdijk, Johanna

Die Mosaikkrankheit der Tomaten. (Mosaic diseases of tomato.) Meded. Phytopath. Lab. Willie Commelin Scholten, Amsterdam, 1: 1-20, 1910.

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**Weston, William H[enry] Jr.**

Report on the plant disease situation in Guam. Guam Agric. Expt. Sta. Report 1917:45-62, 1918.

Reported a yellowing and dwarfing of corn.

**Whetzel, H[erbert] H[ice]**

Report of the pathologist for the period June 10 to Dec. 1921, pp. 30-64. Bermuda, Bd. and Dept. Agric. Reports. 1921:30-64, 1922.

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The seed potato situation. Bermuda Dept. Agric. Bull. 1922:2-4, 1922.

**Whipple, Orville B[laine]**

Degeneration in potatoes. Montana Agric. Expt. Sta. Bull. 130, 29 p., 1919.

Popular discussion. Gives the result of five years' field studies on these diseases.

**White, Richard P[eregrine]**

An infectious chlorosis of roses. U.S.D.A. Plant Diseases Reporter 12(4):33-34, 1928.

Early record and description of the disease.

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Field control of rose diseases. Phytopathology (Abstract) 20(1):130-131, 1930.

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(Diseases of the following ornamental plants: China aster. *Delphinium* or larkspur, iris, peonias, roses, sweet peas and tulips. New Jersey Agric. Expt. Sta. Circ. Nos. 234, 237, 239, 241, 243 & 244, 1931.

Popular notes on virus diseases of these plants.

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Chlorose of the rose. Phytopathology, 22(1):53-69, 1932.

The author describes different types of chlorosis with special attention to the virus type which attacks *Rosa manetti*, *R. multiflora* *R. odorata* and some varieties.

**Whitehead, T[athan]**

A possible cause of "spike" in sandal. Indian For. 42:247, 1916.

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Leaf curl and mosaic of potatoes and their relation to deterioration in yield. Univ. Col. No. Wales, Bangor, Agric., Rpt. Exts., 1920-21: 48-50, 1921.

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Transmission of leaf-roll of potatoes in N. Wales during 1921. Rpt. Int. Conf. Phytopath. and Econ. Ent. Holland, P. 147-149, H. Veenman & Sons. Wageningen, 1923.

The results of studies showing that this disease can be transmitted through the roots.

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Plant virus diseases. Brit. Assoc. Adv. Sci. Rpt. (Abstract) 91: 493, 1923.

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Potato leaf-roll and degeneration in yield. Ann. Appl. Biology 11(1): 31-41, 1924.

A progress report on methods of transmission and treatments.

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Some experiments on potato leaf-roll transmission in Wales. Welsh Journ. Agric. 1(1-10): 184-188, 1925.

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Experiments on the control of potato leaf-roll. Welsh Journ. Agric. 3: 169-180, 1927.

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Phloem-necrosis and starch accumulation in potato leaf-roll. Rep. Brit. Assoc. p. 388-389, 1927.

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Potato leaf-roll. Development of secondary symptoms in the year of infection. Scottish Journ. Agric. 12(2): 214-215, 1929.

Brief preliminary notes on the subject.

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Development of secondary symptoms in the year of infection. Journ. Min. Agric. Gt. Brit. 37: 159-163, 1930.

Results of experiments conducted by the authors. It is suggested that the presence of secondarily infected plants in a crop will afford a reliable index of the degree of infection of the seed-stock only if it is known that the plants had passed a certain critical stage in growth before aphid infestation occurred.

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Transmission of potato leaf-roll. Nature 126(3172): 241-242, 1930.

A brief review of transmission by insects.

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Transmission of potato leaf-roll. *Nature* **125**(3165):974-975, 1930.

The author reports *Myzus circumflexus* as a vector of leaf-roll and *Macrosiphum gei* as a feeble vector.

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A study of the degeneration of certain potato stocks. *Ann. Appl. Biol.* **17**(3):452-486, 1930.

An extensive discussion on the subject giving experimental data.

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Respiration of healthy and leaf-roll potatoes. *Nature* **128**(3240):967, 1931.

A brief note in which the author reports a disturbance in the metabolism of diseased potatoes. He does not offer any explanation of the results at present.

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On the transmission of potato leaf-roll by aphids. *Ann. Appl. Biol.* **18**(3):299-304, 1931.

Both *Myzus circumflexus* Buckton and *M. persicae* Sulz are equally efficient vectors of potato leaf-roll. *Macrosiphum gei* Kock transmitted the disease only once and the author regards this aphid as an open question as vectors.

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The susceptibility of certain potato variations to leaf-roll and mosaic infection. *Ann. Appl. Biol.* **18**(4):508-520, 1931.

Seven varieties were tested. Mosaic infection was very light; on the other hand infections due to leaf-roll were very heavy. Other valuable data are given.

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The physiology of potato leaf-roll. I—On the respiration of healthy and leaf-roll infected potatoes. *Ann. Appl. Biol.* **21**(1):48-77, 1934.

“A comparative study of the rates of respiration, as measured by the weight of carbon dioxide evolved, has been made with healthy and leaf-roll infected potatoes at all stages in the life cycle, under anaerobic as well as aerobic conditions.”

“Except for a short period covering the end of dormancy of the tuber to the first unfolding of the leaves, the infected plant respire at a much higher rate than does the healthy one. This is true also when the conditions of light temperature, and external carbon dioxide approximate to those present in the field.”

“The rate of respiration is not directly related to the presence of virus but rather to the available amount of respirable substrate. Normally the accumulation of such substances in the leaves of leaf-roll plants occurs at a very early stage of development, but can be delayed

by continuous exposure to light of low intensities. Under these latter conditions the rate of respiration of diseased plants approximates to that of healthy ones."

**Wichmann, W.**

Ursache. Verbreitung und Bekämpfung der mosaikkrankheit des Spinats. (Cause, distribution and control of the mosaic disease of spinach.) Obst-und Gemüsebau **76**(10):160-161, 1930.

Brief popular notes on the etiology and control of the mosaic of spinach.

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Die Spinatkrankheit, ihre Uräsache, Verbreitung und Bekämpfung. (The Spinach disease, its cause, spreading and fight.) Nassauer Land **112**:100, 1930. (Obst. u. Gemuseb. **76**:160-161, 1930.)

Discussion on mosaic disease.

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Die spinatkrankheit am Rheim. (The spinach disease at the Rheim.) Die Umschan **34**:451-452, 1930.

**Wickens, G. W., & Carne, W. M.**

Bitter pit in apples. Its occurrence in store in relation to date of picking. Journ. Dept. Agric. W. Australia 2 Ser. **4**(3):354-357, 382-385, 1927.

Account of his conclusions as to the date of picking in relation to the disease. Written before the cause was known.

**Wieler, A[rwed]**

Die grumösen Verstofungen des sereh-kranken suckerrohres. Beit. Wiss. Bot. **2**(1):29-140, 1897.

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Relation of cranberry varieties to the spread of false blossom. Phytopathology (Abstract) **23**(1):36, 1933.

**Wilbrink, G[ertrude], & Ledeboer, F.**

Bijdrage tot de kennis des gelestrepenziekte (Contribution to the knowledge of the yellow stripe disease.) Arch. Java Suikerindus Neder. Indie Jaarg **18**:465-518, 1910. (Reprinted as Meded Proefst. Java Suikerindustrie **2**(39):443-495, 1910.)

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Een-Onderzoek naar de verbreiding der gelestrepenziekte door bladluizen. (An investigation of the transmission of yellow stripe disease by green-lice. Meded. Proefst. Java Suikerind.

30(10) : 413-456, 1922. (Int. Sugar Journ. 25(295) : 346-451, 1923. Rev. Appl. Ent. Ser. A. 11 : 90, 1923. Rev. Appl. Mycol. 2 : 236-237, 1922.)

The author gives brief history of the disease and states that her observations in Java corroborates those of Brandes in the United States.

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Warmwaterbehandeling van stekken als geneesmiddel tegen de serehziekte van het suikerriet. (Hot water treatment for cuttings as a remedy against sereh disease of sugar cane.) Arch. Suikerindus. Nederlan-Indië, Meded. Proefst. Java Suikerindus. No. 1, 15 p., 1923.

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Bekämpfung der Sereh-krankheit. (Combating the sereh disease.) D. Zuckrindunst. 48 : 274, 1923.

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Mechanical transmission of sugar mosaic. Proc. Third Congress Internat Soc. Sugar Cane Technologists p. 155-165, 1930.

This experiment indicated that it is possible for sugar cane mosaic to be transmitted by the cutting knives.

**Wilcox, Raymond B[oorman]**

Eastern blue-stem of the black raspberry. U.S.D.A. Circ. 227, 12 p., 1922.

A description of a disease which may be due to a virus.

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**., & Smith Floyd, F[ranklin]**

Transfer of mosaic disease from red to black raspberry. Phytopathology (Abstract) 14(1) : 55, 1924.

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Observations on masking of raspberry mosaic by high temperature. Phytopathology (Abstract) 16(1) : 80, 1926.

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False blossom inoculation experiments at Toms River, N. T. 1928-1929, Proc. 60th Ann. Conv. Amer. Cranberry Growers' Asso. p. 11-16, 1930.

The author demonstrated that the false blossom of the cranberry was transmitted by the blunt-nosed leaf hopper (*Euscelis striatulus*).

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Adjustments to cranberry false blossom in New Jersey. Proc. Ann. Conv. Amer. Cranberry Growers' Assoc. 63 : 7-11, 14-77, 1932.

Statistical data of cranberry production in New Jersey from 1884 to 1930, and the effect of it due to false blossom.

**Wiles, D. R. D.**

Sugar cane mosaic disease. Barbados Dept. Agric. Ann. Rpt. 1927-28; 16-18, 1928.

Report of the work during the year in regard to sugar-cane mosaic eradication.

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 Report of the plant disease inspector for the year 1928-29. Ann. Rpt. Dept. Agric. Barbados for the year 1928-29: 85-88, 1930. (Rev. Appl. Mycol. 9:560, 1930.)

A record of sugar cane mosaic.

**Wille, J[ohan]**

Die durk die Rübenblattwanze erzeugte krauselkrankheit der Rüben. Arbeiten der Biologischen Reichsanstalt für Land- und Forst-wirtschaft 16(1): 115-167, 1928.

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 Die Rübenblattwanze *Piesma quadrato* Fieb. (The beet leaf bug *Piesma Quadrato* Lieb.) Monogr. Zum Pflanzenschutz, J. Springer, Berlin, 2, p. 116, 1929. (Abs. in Fortsch. der Landw. 4(22): 736, 1929. Rev. Appl. Mycol. 9(3): 153, 1930.)

A study of the beet leaf bug *Piesma quadrata* (*Zosmenus quadratus*) a vector of curl on beets, mangolds, spinach and sorrel (*Rumex acetosa*).

**Williams, C[arrington] B[onsor]**

The mosaic disease of sugar-cane in Trinidad. Trinidad & Tobago Dept. Agric. Bull. 19(1): 30-37, 1920.

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 The mosaic disease of sugar cane. Trinidad and Tobago Dept. Agric. Bull. 19(2): 49-50, 1921.

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 Sugar-cane pest and disease in Trinidad in 1920. Trinidad and Tobago, Dept. Agric. Bull. 19(3): 111-112, 1921. (Rev. Appl. Mycol. 1:192-194, 1921.)

A general discussion of the subject.

**Wingard, S[amuel] A[ndrew]**

Hosts and symptoms of ring spot, a virus disease of plants. Journ. Agric. Research 37(3): 127-154, 1928.

The author gives a review of the literature, and the results of inoculation experiments, with a list of susceptible plants and symptoms.

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Tobacco ringspot: A virus disease with a wide range. Phytopathology (Abstract) 18(1): 133, 1928.

**Winter, J. D.**

Raspberry mosaic from the inspector standpoint. *Minn. Hort.*  
**53**: 33-36, 1925.

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 Raspberry mosaic. *Journ. of Econ. Ent.* **22**(3): 486-490, 1929.  
 A discussion of the five groups of the virus diseases of Raspberries.

**Wolcott, George N[orton]**

The minor sugar-cane insects of Porto Rico. *Journ. Dep. Agric.*  
*Porto Rico* **5**(2): 5-46, 1921. (*Rev. Appl. Ent. ser. A.* **10**: 96-  
 98, 1922.)

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 Annual Report of the Division of Entomology. *Puerto Rico*  
*Ins. Expt. Sta. Ann. Rpt.* **1920-21**: 47-49, 1922.  
 Brief note of the work of the year concerning sugar cane mosaia.

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 Informe anual de la División de Entomología. *Puerto Rico.*  
*Ins. Expt. Sta. Ann. Rpt.* **1922-23**: 33, 1923.  
 Preceding annotation.

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 El áfido del maíz. *Aphis maidis* Fich. (The corn Aphids, *Aphis*  
*maidis* Fitch.) *Puerto Rico Ins. Expt. Sta. Bull.* **32**: 43, 1924.  
 Popular note. Description of the insect as vector of sugar cane  
 mosaic.

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 Los áfidos que afectan a la industria azucarera del Perú.  
 (Aphis that affect the sugar industry in Perú.) *La Vida*  
*Agrícola (Perú)* **5**(59): 877-886, 1928. (*Estac. Expt. Agron.*  
*Soc. Agrar. Circ. No. 12.* 1928 *Rev. Appl. Ent. ser. A.* **17**:  
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 Increase of insect transmitted plant diseases and insect damage  
 through weed destruction in tropical agriculture. *Ecology*  
**9**(4): 461-466, 1928.  
 Refers to the passage of *Aphis maidis* from grasses to sugar cane af-  
 ter cultivation, which is followed by an increase in mosaic.

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 Mosaic sugar cane in Perú. *Science.* **69**: 381, 1929.

**Wolf, Frederick A[dolphus], & Legman, S[amuel] G[eorge]**

Notes on new or little known plant diseases in North Carolina  
 in 1920. *North Carolina Agric. Expt. Sta.* **43**: 55-58, 1920.

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Epiphytology of tobacco mosaic in North Carolina. *Phytopathology* (Abstract) **21**(1): 118, 1931.

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Roguing as a means of control of tobacco mosaic. *Phytopathology* **23**(10): 831-833, 1933.

Advises to practice this system for checking the spread of tobacco mosaic.

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Effect of mosaic of flue-cure tobacco on yield and quality. *Phytopathology* **23**(10): 834-836, 1933.

The authors found out that the degree of damage of mosaic disease on tobacco is related to the stage of growth at which infection occurs. The younger the plants the greater the damage. Mosaic seriously reduces the yield and quality.

**Wolk, P. R.**

Het nieuwe gezichtspint de serehziekte. (New view point on "sereh" disease.) *Culture* **30**: 302-306, 1918.

**Wollman, E.**

Bacteriophagie et processus similaires: I. Hérité en infection? II. Maladies des mosaïques des plantes. (Bacteriophage and similar processes. I. Heredity or infection? II. Mosaic disease of plants.) *Bull. Inst. Pasteur* **26**(1): 1-14, 1928.

**Wolzogen-Kühr, C. A. H. von**

Onderzoekingen aangaande de mikroflora aanwezig in normaal en serehziek suikerriet. (Investigations of the microflora present in normal and sereh-diseased sugar cane.) *Meded. Proefstat. Java Suikerind.* **9**: 321-481, 1923. (Rev. *Appl. Mycol.* **3**(5): 302-303, 1924.)

An extensive study on the possibility of this disease being due to bacteria.

**Wood, E. J. F.**

Bureau of Sugar Experiment Station. Asst. Pathologist Report. *Queensland Agric. Journ.* **27**(5): 395-396, 1927. (Rev. *Appl. Mycol.* **6**: 696-697, 1927.)

Brief reference to mosaic of sugar cane.

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Bureau of Sugar Experiment Stations. Asst. Pathologist Report. *Queensland Agric. Journ.* **27**(4): 273-275, (5): 395-396, 1927.

A brief report on mosaic of sugar cane.



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Cane diseases. Queensland Agric. Journ. 27(6) : 498-499, 1927.  
(Rev. Appl. Ent. Ser. A. 15 : 661, 1927.)

A brief report on mosaic of sugar cane.

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Mosaic in Southern Queensland. Australia Sugar Journ. 18 :  
746-747, 1927.

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Fiji disease in the Maryborough district. Queensland Agric.  
Journ. 27(5) : 388-393, 1927.

A report on cause, transmission, rate of spread, losses, effects and  
regulation for control.

### **Woods, Albert F[red]**

The Bermuda lily disease. A preliminary report of investiga-  
tions. U.S.D.A., Div. Veg. Phy. & Path. Bul, 14, 15 p., 1897.

A discussion of the author's studies on this disease which he believes  
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