

PHYCOMYCETES

CHYTRIDIALES.

PLASMODIOPHORACEAE.

Plasmodiophora Brassicae Woron.

Pole Evans (1913) 93; van der Byl (1922 d) 282; Verwoerd (1929 b) 9, (1931 a) 298; Doidge & Bottomley (1931) 15, 32, 59, 64; Nel (1942) 9; Anon. (1935) 82; Karling (1942) 93, 127.

on **Brassica oleracea** Linn., Stellenbosch, *v. d. Byl*, 18094, and *Verwoerd*; Bellville, *Bowman*, 28258; Kruispad and Brackenfel, *Brink*; Bottelary and Kuils Rivier, *v. d. Byl*; Wellington, *v. d. Byl* 2431, and *Verwoerd*, (Stell. 311); Maitland, Paarl and Cape Flats, *Verwoerd*; Bloemfontein, *Verwoerd*; Alberton, *Mendes*, 33918.

Brassica oleracea var. **acephala** DC., Wellington, *v. d. Byl*.

Brassica oleracea var. **botrytis** Linn., Brackenfel, *v. d. Byl*, 18064.

Stellenbosch, Dieprivier, Wellington and Kuilsrivier, *Verwoerd*.

Brassica oleracea var. **gemmifera** Zenk., Wynberg, *Verwoerd*.

Brassica rapa Linn., intercepted in the United States on material from South Africa.

Iberis sp., Durban, *Wager*, 34160.

Sorodiscus radicolus Ivimey Cook

Ivimey Cook (1931) 321; Karling (1942) 48.

on **Gynandropsis pentaphylla** DC., Greylingspos, *Doidge*, 27351 Type, and *F. Turner*, 23206; The Hangingshaw, Rustenburg, *F. Turner*, 23381; *Koster*, *Shorten*, 23217.

Spongospora subterranea (Wallr.) Lagerh.

Doidge & Bottomley (1931) 52; Hopkins (1938 a) 98, (1939 a) 43; Nel (1942) 9; Karling (1942) 57, 135.

on **Solanum tuberosum** Linn., tubers and stems, Tweespruit, *Nelson*, 18024; Cato Ridge, *Allsop*, 24956; Hamberg, *F. Turner*, 27356; Eloff, *Caplan & Blieden*, 28722; Salisbury (Rh. 1828, 3239); Chipinga (Rh. 3011); Somabula (Rh. 3221); without locality, *v. d. Byl* 463.

WORONINACEAE.

Olpidiopsis Ricciae du Plessis.

du Plessis (1933 a) 761; Nel (1942) 8.

on **Riccia** sp., Stellenbosch, *Duthie* 5006, 5007, (Stell. 603, *v. d. Byl* 2691) Knysna, *Duthie* 5118.

SYNCHYTRIAACEAE.

Synchytrium Cotulae du Plessis.

du Plessis (1933 e).

on **Cotula coronopifolia** Linn., Stellenbosch, *Duthie*, (Stell. 862).

Synchytrium Dolichi (Cooke) Gumann

van der Byl (1928 a) 183; Nel (1942) 10.

Aecidium Dolichi Cooke, (1882 a) 127.

Aecidium Rhynchosiae Cooke, (1882 a) 127.

Woroninella Dolichi (Cooke) Syd., van der Byl (1925 b) 191; Hopkins (1938 a) 98 (1939 a) 48.

- on *Dolichos biflorus* Linn., Inanda, *Medley Wood* 640, 340, 840, 10290.
Dolichos sp., Inanda, *Medley Wood* 40, 10291.
Desmodium sealpe (Comm.) DC., Inanda, *Medley Wood* 613, 10301, 11200.
Glycine javanica Linn., Durban, *v. d. Byl* 76.
Rhynchosia spp., Maritzburg, *Pole Evans*, 1432; Barberton, *Pole Evans*, 1161; Natal,
Medley Wood 557, 11114, Kew.
Vigna luteola (Jacq.) Benth., Goukama R., *Duthie* (*v. d. Byl* 1703).
Vigna triloba (Thunb.) Walp., Shamva (Rh. 2595).

***Synchytrium endobioticum* (Schilb.) Perc.**

- Doidge (1926) 161; Doidge & Bottomley (1931) 53.
 on *Solanum tuberosum* Linn., Castle Howard, *Woodrow*, 15439; Witpoortje and Hamberg,
Doidge; Pretoria (artificial infection) 15511; isolated outbreaks of this disease in 1922
 and 1925 were dealt with by quarantine measures; last occurrence in 1926.

CLADOCHYTRIACEAE.

***Physoderma Maydis* Miyabe**

- Physoderma Zeae-maydis* Shaw, Hopkins (1938 a) 98, (1939 a) 50.
 on *Zea Mays* Linn., Salisbury, (Rh. 1295, 1310).

BLASTOCLADIALES.

BLASTOCLADIACEAE.

***Allomyces arbusculus* Butler**

- Wolf (1946) 167; Sparrow (1943) 422-3.
 isolated from soil samples, from bank of Kat River, about a foot above normal water level,
 but covered during flood periods, near Balfour, Cape, *Moore*; from roadside pool,
 overgrown with bulrushes, on the Katberg road near Balfour, Cape, *Moore*.

SAPROLEGNIALES.

SAPROLEGNiaceae.

***Saprolegnia ferax* Auct.**

- on *Cuprinus auratus* (gold fish) Union Buildings, Pretoria, *Goldblatt*, 17280.
Ranidae undet., (frog) without locality, 17290.

PERONOSPORALES.

ALBUGINACEAE.

***Cystopus austro-africanus* (Syd.) Sacc. & Trott.**

- Sacc. Syll. Fung. XXIV (1926) 33.
Albugo austro-africanus Syd., H. & P. Sydow (1912 c) 437.
Cystopus austro-africanus (Syd.) Wakefield (1927) 244.
 on *Aizoon rigidum* Linn., Humewood, *Doidge*, 1234, Kew.

***Cystopus Bliti* de Bary**

- Sacc. Syll. Fung. VII: 236; Wakefield (1927) 246; Hopkins (1939 a) 4.
Cystopus Amaranthi Berk. (?) Kalchbrenner (1882 b) 27.

on *Achyranthes aspera* Linn., Garstfontein, *Pienaar*, 1205, 1310, Kew, and *Doidge*, 1477, Kew; Duivelskloof, *Doidge*, 20334, Kew.

Achyranthes sp., Salisbury, *Hopkins*.

Amaranthus angustifolius Lam., Somerset East, *MacOwan* 1320, 20808.

Cyathula globulifera Moq., Somerset East, *MacOwan* 1313, 21990 (de Thuem. Myc. Univ. 1512), also ex Herb. Kalchbr. Kew; Garstfontein, *Pienaar*, 1268, Kew.

Cystopus candidus (Pers.) de Bary

Kalchbrenner (1882 b) 27; Sacc. Syll. Fung. VII: 234; Wakefield (1927) 243;

Doidge & Bottomley (1931) 30, 54, 64; Verwoerd (1931 a) 298.

Albugo candida (Pers.) O. Kuntze, van der Byl (1922 d) 283; Nel (1942) 8; Cardoso (1945) 155.

Albugo candida f. *Heliophilae* Hennings (1898) 293.

on *Armoracia rusticana* Gaertn., Constantia, *Lounsbury*, 718; Cape Town, *Mally*, 11822 Bloemfontein, *Verwoerd*; Stellenbosch, v. d. *Byl*, and *Verwoerd* (Stell. 316); Helderberg, v. d. *Byl* 101.

Brassica napus Linn., Natal, *Medley Wood* 459, 10453, Kew; Somerset East, *MacOwan* 1248, 20914 (S.A.M. 33353); Kilgobbin, *Fannin*, (v. d. *Byl* 577) 31828;

Brassica nigra Koch, Equeefa, *Fuller*, 1537, Kew.

Brassica rapa Linn., Pretoria, *Bottomley*, 20400, Kew; Stella Bush, *Wager*, 33194; Irene, *Pole Evans*, 34352.

Brassica spp., Port Elizabeth, *Doidge*, 1232; Isipingo, v. d. *Merwe*, 15509; Glen, *Shuttleworth*, 32659.

Cardamine africana Linn., Somerset East, *MacOwan* 1199, 21949 (de Thuem. Myc. Univ. 1314) Kew; Boschberg, *MacOwan* 1287, ex Herb. Kalchbr., Kew.

Heliophila Meyeri Sond., Van Rhynsdorp, *Schlechter*, Kew.

Heliophila sp., Cape Town, *Lounsbury*, 192, Kew; Tulbagh, *Duthie*, (v. d. *Byl* 2597, Stell. 500); Gordon's Bay, *du Plessis*, (Stell. 554).

Lepidium sp., Steynsberg, *Pole Evans*, 20623.

Raphanus sativus Linn., Pretoria, *Wager*, 21584; Stellenbosch, v. d. *Byl* 879; Constantia, *Verwoerd*, (Stell. 453).

Sisymbrium gariepinum Burch., Bloemfontein, *Potts*, 9756, Kew.

Sisymbrium sp., Bloemfontein *Verwoerd*.

Cystopus cubicus (Strauss) de Bary

Wakefield (1927) 245; *Doidge* & Bottomley (1931) 11, 56; Hopkins (1938 a) 99, (1939 a) 20.

Albugo Tragopogonis S. P. Gray, Nel (1942) 8.

as *Albugo cubicus* Nel (1942) 8.

on *Cenia turbinata* Per., Somerset West, *du Plessis* (Stell. 831).

Cineraria sp., Stellenbosch, v. d. *Byl* 2619 and *Verwoerd* (v. d. *Byl* 1256).

Dimorphotheca sp., Pretoria, *Greenstein*, 30665, *du Toit*, 33747, and v. d. *Merwe*, 33897.

Gerbera Jamesoni Bolus, Barberton, *Pole Evans*, 1159, Kew; Pretoria, *Pole Evans*, 7803, Kew, *Bottomley*, 18074, 33452, 32655, *Doidge*, 20366 and *Hean*, 32743; Johannesburg, *Kelly*, 10020, Kew; Empangeni, *Krietzen*, 25493; Salisbury, *Hopkins*, 27353; Salisbury (Rh. 2533, 2543, 2611, 3003, 3029, 3128); Durban, v. d. *Byl* 1150; Chase Valley, *Wager*, 33285.

Gerbera plantaginea Harv., Garstfontein, *Pienaar*, 1986, Kew and *Erasmus* 2081, Kew.

Senecio angustifolia Willd., Pretoria, *Pole Evans*, 11325, Kew.

Senecio inaequidens DC., Maritzburg, *Pole Evans*, 1428, Kew; Mooi River, *Mogg*, 12242.

Senecio orbicularis Sond., Pretoria, *Bottomley*, 9744, Kew and 18070; Irene, *Pole Evans*, 20365, Kew.

Senecio pellucidus DC. var. **ruderalis** Harv., Allerton, *Steyn*, 30898.

Senecio pinnulatus Thunb., Hopefield, v. d. *Byl* 1290 (Stell. 145).

Senecio sp., Stellenbosch, v. d. *Byl* 2619 and *Verwoerd* (v. d. *Byl* 1256); Hopefield, v. d. *Byl* (Stell. 884).

Cystopus Evansii (Syd.) Sacc. & Trott.

Sacc. Syll. Fung. XXIV (1926) 34.

Albugo Evansii Syd., H. & P. Sydow (1912 c) 437; Nel (1942) 8.

Cystopus Evansii (Syd.) Wakefield (1927) 246; *Verwoerd* (1931 a) 298; Doidge & Bottomley (1931) 41.

on **Nemesia strumosa** Benth. var. **Suttonii** Hort., Bloemfontein, *Verwoerd*.

Nemesia spp., Hoogfontein, v. d. *Merwe*, 1472, Kew, Type; Port Alfred, *Graham*, 23469; Darling, *Duckitt*, v. d. *Byl* 2585 and *Verwoerd* (Stell. 414); Stellenbosch, *Sauer* (Stell. 830).

Cystopus Ipomoeae-panduranae (Schw.) Stev. & Swing.

Wakefield (1927) 245.

on **Convolvulus ulosepalus** Hall.f., Buffelspoort, *Doidge*, 33139.

Ipomoea cardiosepala Hochst., Inanda, *Medley Wood* 225, Kew. *Medley Wood* 467, 847, 10452; Barberton, *Wager*, 26153.

Ipomoea ficifolia Lindl., Tzaneen, *Doidge*, 20319, Kew.

Ipomoea obscura Ker., Tzaneen, *Doidge*, 20338, Kew.

Ipomoea sp., Barberton, *Pole Evans* 1160, Kew.

Cystopus Portulacae de Bary

Kalchbrenner (1882 b) 27; Sacc. Syll. Fung. VII: 235; Wakefield (1927) 244; Hopkins (1938 a) 99, (1939 a) 35.

on **Portulaca oleracea** Linn., Somerset East, *MacOwan* 1303, (de Thuem. Myc. Univ. 252 b, Rabenh.-Wint. Fung. Eur. 3775) 20827, Kew; Skinner's Court, 101, Kew; Pretoria, *Burt Davy*, 148, 157, Kew, *Pole Evans*, 18083, *Hean*, 29948, *Doidge*, 29949; Lyttelton Junction, *Erasmus*, 1515, Kew; Garstfontein, *Pienaar*, 2145, Kew; Salisbury, *Hopkins*.

Cystopus quadratus Kalchbr. & Cooke.

Kalchbrenner & Cooke (1880) 22; Wakefield (1927) 246; Sacc. Syll. Fung. VII: 237.

on **Hypoestes verticillaris** R. Br., Cape, *MacOwan* 1314, Kew, Type; Garstfontein, *Pienaar* 1425, Kew.

Cystopus Schlechteri Syd.

P. Sydow (1899 d) (142); Sacc. Syll. Fung. XVI: 396.

on **Salsola aphyllia** Linn. f., eastern region of South Africa, *Schlechter*.

Cystopus Tragopogonis (Pers.) Schroet.

Verwoerd (1929 b) 25; van der *Byl* (1929 b) 102.

on **Helianthus annuus** Linn., Durban, *Wager*, 32417; Buffelspoort, *Redpath*, 34076; Hatfield, Pretoria, *Anderssen*, 34078; Naboomspruit, 34050, 34166.

Scorzonera hispanica Linn., Stellenbosch, *Verwoerd*; Paarl, *Verwoerd*.; Stellenbosch, *Joubert* (v.d. *Byl* 2063).

PYTHIACEAE.

Phytophthora cactorum (Leb. & Cohn) Schroet.

Mes (1934) 286 ; Wijers (1937) 211 ; Wager (1941 a) 24, (1942 b) 538, 540.

Phytophthora citricola Sawada, Doidge & v. d. Plank (1926) 23.

isolated from :

Antirrhinum majus Linn., Pretoria, Mes, Wager 185, 32599, Verdoorn, 29725 ; Durban, Wager 536.

Centaurea moschata Linn., Pretoria, Wager.

Citrus maxima Merr., Fish River, Doidge (Wager 292) 32600.

Dianthus caryophyllus Linn., Pretoria, Wijers.

Verbena hybrida Voss., Pretoria, Wijers.

Phytophthora cinnamomi Rands

Wager (1941 a) 16, (1942 b) 538, (1942 a) 521.

as *Phytophthora cambivora* Petri, Doidge & Bottomley (1931) 10 ; Wager (1931) 32.

isolated from :

Persea americana Mill., Nelspruit, Doidge (Wager 385) 32601 ; Buffelspoort, Wager 501 d ; Phoenix, Wager 509, 591.

Phytophthora citrophthora (R. E. & E. H. Sm.) Leon.

Wager (1931) 35, (1941) 23, (1942 b) 538, 540 ; Hector & Loest (1937) 643, Doidge & v. d. Plank (1936) 23 ; Bates (1937) 176 ; Cardoso (1937) 151, (1938) 74, (1939) 44 (1945) 151, 152, 153 ; Hopkins (1938 a) 99, (1939 a) 11 ; (1943) 182.

Pythiacystis citrophthora R. E. & E. H. Sm., Doidge (1925) 499 ; Cardoso (1935) 186 ; Doidge & Bottomley (1931) 43, 45.

isolated from :

Citrus Limonia Osbeck, Mazoe, Bates ; Muden, Wager 546 ; Umbeluzi, Cardoso ; Moamba, Marracuene, Manhiça, Cardoso.

Citrus maxima Merr., Patentie, Wager 190, 32602 ; Mazoe and Rusapi, Hopkins ; Nkwaleni, Wager.

Citrus nobilis Lour. var. **deliciosa** Sw., Umbeluzi, Moamba, Marracuene, Cardoso ; Mposa, Zululand ; Lourenço Marques, Nascimento.

Citrus sinensis Osbeck, Marico Distr. and Northern Transvaal, Doidge ; Mazoe, Bates ; Sul do Save, Cardoso ; Fort Beaufort, Wager, 32603 ; Sundays River, Loest ; eastern Transvaal, Loest ; Thabazimbi, Jourdan ; Umbeluzi, Moamba and Marracuene, Cardoso ; Lourenço Marques, Guimarães.

Citrus spp., Mayfern, Loest, 33295 ; soil in orange grove, Mazoe, Bates 321.

Phytophthora cryptogea Pethybr. & Laff.

Wager (1941 a) 28.

isolated from :

Godetia sp., Pretoria, Bottomley (Wager 219) 32604.

Chrysanthemum cinerariifolium Viz., Mazoe, Bates 363 (Wager 515) ; Hopkins (Rh. 6229), ? host as *Pyrethrum* sp.

Phytophthora infestans (Mont.) de Bary

Doidge & Bottomley (1931) 52, 64 ; Verwoerd (1929 b) 23 ; Wager (1941 a) 20.

on **Solanum tuberosum** Linn., Pretoria, Battison, 311 ; Eikenhof, Brink, 760 ; Houtbosch-dorp, Scott, 28721 ; Haenertsburg, Lake, 28268 ; Mokeetsi, Lixon, 29885 ; Nottingham Road, Clouston, 27383 ; Fort Beaufort, Wager ; Stellenbosch, Verwoerd ; Paarl,

Verwoerd; Plettenberg Bay, *Verwoerd*; Camperdown, *Gavin*, 31988; Knysna, *Mostert*, (Stell. 804); Wynberg, (Stell. 1052); East London, *Doidge*, 10905; Sarnia. Mt. Edgecombe, Phoenix, *Wager*; Donnybrook, *Hains*; Rosetta, *Ratsey*; Mooi River, *Pickering & Tatham*.

Lycopersicum esculentum Mill., Natal coast, *Doidge & Bottomley* and *Storey*.

***Phytophthora parasitica* Dast.**

Wager (1935 a) 236, (1941 a) 21; *Hopkins* (1931 d) 49, (1938 a) 99, (1939 a) 5, 10, 21, 24, 27, 40, (1939 b) 40, (1943) 185, 186.

Phytophthora parasitica var. *Rhei* *Godfrey*, *Doidge & Bottomley* (1931) 55; *Wager* (1931) 35, 38.

isolated from:

Anthirrhinum majus Linn., Salisbury, (Rh. 1399, 2615).

Clarkia elegans Dougl., Salisbury (Rh. 2759, 3391).

Cotyledon sp., Pretoria, *Wager*; Salisbury (Rh. 1669).

Delphinium cultorum Voss, Pretoria, *Doidge*, 30783.

Godetia sp., Salisbury (Rh. 2698).

Hibiscus Sabdariffa Dast., Umtali, *Hopkins*.

Lilium philippense Baker, Salisbury (Rh. 3667).

Lycopersicum esculentum Mill., Nelspruit, *Wager* 285, 32606; *Mazoe*, *Bates*, 321 b; Durban, *Wager* 587, 590.

Nicotiana Tabacum Linn., Salisbury (Rh. 1538); Sabi Valley (Rh. 1473).

Rheum Rhaponticum Linn., Uitenhage; Leeuwdoorns; Potchefstroom; Nelspruit, *Wager* 133, 32605; Humansdorp; Kat River; Salisbury (Rh. 1458); *Syringa*, (Rh. 2323).

Trichocaulon sp., Pretoria, *Wager*.

isolated from soil under indigenous trees, *Mazoe*, *Bates* 331.

***Phytophthora Syringae* Kleb.**

Wager (1941 a) 30, (1942) 541.

Phytophthora hibernalis Carne, *Doidge & v. d. Plank* (1936) 23.

isolated from:

Citrus sinensis Osbeck, Fish River, *Doidge* (comm. *V. A. Putterill*).

***Pythium acanthicum* Drechsl.**

Wager (1941 a) 13.

isolated from:

Dahlia pinnata, Cav., Pretoria, *Wager*.

Hibiscus sp., Cavendish, *Wager* 524.

Pisum sativum Linn., Nelspruit, *Wager* 222, 32607.

***Pythium sphanidermatum* (Eds.) Fitz.**

Doidge & Bottomley (1931) 46, 53; *Wager* (1931 b) 436, (1932 c) 465, (1933 b) 248 (1941 a) 5; *Hopkins* (1938 a) 99, (1939 a) 27, (1939 b) 103.

isolated from:

Amaranthus tricolor Linn., Umhlanga Rocks, *Wager* 570.

Carica Papaya Linn., eastern and northern Transvaal, Natal and Cape, *Wager* 130, 32608.

Celosia argentea Linn., Umhlanga Rocks, *Wager* 569.

Citrus sp., Muden, *Wager* 538.

Cucurbita Pepo Linn., Nelspruit, *Wager*.

Lycopersicum esculentum Mill., Nelspruit, *Wager*; Windhoek, *Wager*; Durban, *Wager* 572, 578.

Nicotiana Tabacum Linn., Rustenburg, *Wager*; Balfour, *Wager*; Banket, (Rh. 3688).

Pteridium aquilinum (L.) Kuhn, White River, *Wager*.

Sechium edule, Sw., Nelspruit, *Wager*.

Solanum melongena L. var. *esculentum* Nees, Nelspruit, *Wager*.

Solanum tuberosum L., Pretoria *Wager* 140, 32609.

Pythium Debaryanum Hesse.

Hopkins (1932) 463, (1938 a) 99, (1939 a) 17, 24, 28; *Wager* (1941 a) 17.

Pythium Fabae Cheney, *Wager* (1941 a) 18.

isolated from:

Antirrhinum majus Linn., Salisbury, *Hopkins*.

Coleus sp., S. Rhodesia, *Hopkins*.

Delphinium cultorum Voss, Salisbury (Rh. 1994).

Lactuca sativa Linn., Salisbury (Rh. 2153).

? *Musa paradisiaca* L. var. *sapientium* Kunze, Cavendish, *Wager* 511.

Nicotiana Tabacum Linn., Salisbury, (Rh. 1512, 1806); M'Sonnedi (Rh. 1910).

Persea americana Mill., Buffelspoort, *Wager* 506.

Stapelia sp., Pretoria, *Wager* 224, 32610.

Var. *Pelargonii* Braun.

Wager (1941 a) 18.

isolated from:

Phaseolus vulgaris Linn., Pretoria, *Wager* 247, 32611.

Pythium irregulare Buisman.

Wager (1931) 5, (1941 a) 7, (1942 b) 538; Doidge & van der Plank (1936) 23;

St. John-Brooks (1936) 107.

isolated from:

Antirrhinum majus Linn., Durban, *Wager* 536.

Carica Papaya Linn., Louis Trichardt, *Wager* 155, 32613.

Citrus sinensis Osbeck, Kosterfontein, *F. Turner* (*Wager* 90) 32612.

Pythium myriotylum Drechsl.

Wager (1932 b) 435, (1941 a) 10.

isolated from:

Carica Papaya Linn., Nelspruit, *Wager* 200, 32614.

Pythium oligandrum Drechsl.

Wager (1941 a) 15.

as *Pythium cf. artotrogus*, *Wager* (1931) 39.

isolated from:

Antirrhinum majus Linn., Pretoria, *Wager* 103, 32615.

Brassica oleracea Linn., Pretoria, *Wager* 214, 32616.

Cucurbita Pepo Linn., Pretoria, *Wager*.

Papaver Rhoeas Linn., Pretoria, *Wager*.

Pythium spinosum Sawada

Wager (1931) 5, (1932 b) 435, (1941 a) 12.

isolated from:

Antirrhinum majus Linn., Durban, *Wager* 534.

Carica Papaya Linn., Louis Trichardt, *Wager* 156, 32618.

Phaseolus vulgaris Linn., Cavendish, *Wager* 529.

Pythium splendens Braun

Wager (1931 16, (1932 b) 435, (1941 a) 11.

isolated from :

Carica Papaya Linn., Nelspruit, *Wager 151*, 32617.

Hibiscus sp., Phoenix, *Wager 525*.

Lycopersicum esculentum Mill., Cavendish, *Wager 528* ; Durban, *Wager 583*.

Zinnia elegans Jacq., Durban, *Wager 571*.

Pythium ultimum Trow

Doidge & Bottomley (1931) 30, 46, 60 ; Wager (1931) 10, 16, 34, (1932 b) 436, (1941 a) 4 ; Hopkins (1938 a) 99, (1939 a) 10, 16, 27, 34.

as *Pythium* sp., Hopkins (1932) 465.

isolated from :

Althea rosea Cav., Salisbury, *Hopkins*.

Aloe variegata Linn., Pretoria, *Wager*.

Arachis hypogea Linn., Settlers, *Wager*.

Brassica oleracea Linn., Port Elizabeth, *Wager* ; Salisbury, *Hopkins*.

Callistephus chinensis Nees, Pretoria, *Wager 170*, 32620.

Carica Papaya Linn., eastern and northern Transvaal, Natal and Cape, *Wager 150*, 32619 ; Salisbury and Hartley (Rh. 2273).

Citrus sinensis Osbeck, Fort Beaufort, *Wager*.

Clarkia elegans Dougl., Salisbury, (Rh. 1353).

Coleus sp., Salisbury (Rh. 1652).

Cupressus sp., Mbesa (Rh. 1435).

Dahlia pinnata Cav., Pretoria, *Wager*.

Delosperma sp., Pretoria, *Wager*.

Delphinium cultorum Voss, Pretoria, *Wager*.

Dianthus plumarius Linn., Pretoria, *Wager*.

Dinteranthus microspermus Schantz, Pretoria, *Wager*.

Duvalia parviflora N.E.Br., Pretoria, *Wager*.

Fenestraria aurantiaca N.E.Br., Pretoria, *Wager*.

Gilia rubra Heller, Pretoria, *Wager*.

Hakea sp., Durban, *Wager 566*.

Ipomoea batatas Lam., Pretoria, *Wager*.

Lathyrus odoratus Linn., Pretoria, *Wager*.

Lycopersicum esculentum Mill., South-West Africa, *Wager* ; Durban, *Wager 583*.

Mesembrianthemum sp., Pretoria, *Wager 281*, 32621.

Nicotiana Tabacum Linn., Rustenburg, *Wager* ; Salisbury (Rh. 3404).

Papaver nudicaule Linn., Pretoria, *Wager* ; Stellenbosch, *Dippenaar*.

Persea americana Mill., Buffelspoort, *Wager 503*.

Phaseolus vulgaris Linn., Pretoria, *Wager*.

Pinus Coulteri D. Don., Bulawayo (Rh. 2686).

Pinus radiata Don., Salisbury, *Hopkins*.

Pinus spp., Pretoria, *Wager* ; Salisbury (Rh. 2172).

Pisum sativum Linn., Nelspruit, *Wager*.

Rheum Rhaponticum Linn., Pretoria, *Wager*.

Solanum Melongena Linn., var. **esculentum** Nees., Durban, *Wager 589*.

Stapelia sp., Pretoria, *Wager*.

Striga lutea Lour., Pretoria, *Wager*.

Tavaresia sp., Pretoria, *Wager*.

Tropaeolum majus Linn., Pretoria, *Wager*.

Pythium vexans de Bary

Wager (1941 a) 8, (1942 a) 523.

isolated from :

Carica Papaya Linn., Louis Trichardt, *Wager* 201, 32622.**Limonium latifolium** Kze., Pretoria, *Wager* 227, 32623.**Persea americana** Mill., Buffelspoort, *Wager* 501 b.**Pythium** sp.

McMartin (1937 b) 267, 253.

on **Saccharum officinarum** Linn., Natal coast, *McMartin*.**Pythium** sp.

Moore (1926) 428.

on **Nicotiana Tabacum** Linn., seedlings, *Moore*.

PERONOSPORACEAE.

Peronoplasmodium cubensis (Berk. & Curt.) Clint.

Doidge & Bottomley (1931) 22.

Pseudoperonospora cubensis (Berk. & Curt.) Verwoerd & du Plessis (1931) 294;

Wager (1935 a) 457.

on **Cucumis sativus** Linn., Mokeetsi, *Fry*, 25972; Karino, *Domirle*, 24877; Alkmaar. *Wager*, 26569; Kaapmuiden, *Hulley*, 27580, *Phillips*, 23234; Barberton, *Button*, 641; East London, *Slemert*, 17087.**Cucumis Melo** Linn., Constantia, *Verwoerd* (Stell. 470); Villiersdorp, *Lotter* (Stell. 417); Wynberg, *Dippenaar*.**Citrullus vulgaris** Schrad., South-western Cape, *Dippenaar*.**Peronospora destructor** (Berk.) Casp.*Peronospora Schleideni* Unger, Pole Evans (1911 b) 258; Eyles (1926) 643; Hopkins (1930) 528; Verwoerd (1929 b) 19, (1931 a) 298; Doidge & Bottomley (1931) 42; Nel (1942) 9.on **Allium ascalonicum** Linn., Kentani, *Pegler* 2391, 9528.**Allium Ceba** Linn., Zandvlakte, *Gellman*, 30841; Joubertina, *Reinecke*, 30839, 33330; Riversdale, *Verwoerd* (Stell. 469); Bloemfontein, *Verwoerd*; Potchefstroom, *Pienaar*, 1912; Pretoria *F. de Villiers*, 5130, *Faure*, 11791, *Rickert*, 30842 and *van Rooyen*, 32205; Klip River, *v. Zyl*, 9193; Marabastad, *Maré*, 30840; Bubi, *Eyles*; Stellenbosch, *Malan* (v. d. Byl 1302), *Verwoerd*, (Stell. 147); Wonderboom, *Bottomley*, 33329; Joubertina, *Reinecke*, 33330; Fort Victoria, *Hopkins* (Rh. 6122).**Peronospora effusa** (Grev.) Rabenh.

Nel (1942) 9.

on **Chenopodium ambrosioides** Linn., Bon Accord, *Mogg*, 32430; Pyramids, *Mogg*, 32643.**Chenopodium foetidum** Schrad., Potgietersrust, *Forster*, 28507.**Chenopodium murale** Linn., Knysna, *du Plessis* (Stell. 591).**Chenopodium** spp., Cana, *Hean*, 32144; Sandown, *Hean*, 32426; Hopefield, *v. d. Byl* 1293.**Spinacia oleracea** Linn., Johannesburg, *Cohen*, 34213.

Peronospora Euphorbiae Fuck.

Verwoerd & du Plessis (1933) 227; Nel (1942) 9.
on *Euphorbia* sp., Piquetberg, *du Plessis* (Stell. 602, v. d. Byl 2689).

Peronospora Mesembryanthemi Verw.

Verwoerd (1924 a) 13; Doidge & Bottomley (1931) 38; Nel (1942) 9.
on *Mesembryanthemum* spp., Stellenbosch, Verwoerd (Stell. 104, v. d. Byl 1242) Type;
Grahamstown, *Dyer*, 23383, 23631; Bathurst Rail, *Elliott*, 25481; Kloof, *McCleane*,
26332.

Peronospora obovata Bon.

Verwoerd & du Plessis (1933) 228; Nel (1942) 9.
on *Spergula arvensis* Linn., Stellenbosch, *Verwoerd & du Plessis*, (Stell. 614), v. d. Byl 2688).

Peronospora Oxalidis Verw. & du Pless.

Verwoerd & du Plessis (1932) 314; Nel (1942) 9.
on *Oxalis cernua* Thunb., Stellenbosch, *du Plessis* (Stell. 547, v. d. Byl 2686) Type.
Oxalis sp., Elsenburg, *du Plessis*.

Peronospora parasitica (Pers.) Tul.

Verwoerd (1929 b) 24; Doidge & Bottomley (1931) 15, 54; Nel (1942) 9.
on *Brassica oleracea* Linn., Wellington, *Davies*, 27264; Grahamstown, *McCleane*, 23807;
Pretoria, *Bottomley*, 20352; Schagen, *Theron*, 26145; Estcourt, 24343; Krantzdkloof,
Bell, 8967; without locality, 460; Stellenbosch, *du Plessis* (Stell. 556, v. d. Byl 2685).
Brassica oleracea var. *acephala* DC., south-western Cape, *Dippenaar*.
Brassica rapa Linn., Kameeldrift, v. *Willigh*, 34323.
Raphanus Raphanistrum Linn., Somerset West, *du Plessis* (Stell. 801, v. d. Byl 2701).
Raphanus sativus Linn., Groot Drakenstein, *Turner*, 7350.

Peronospora Rumicis Corda

Verwoerd & du Plessis (1932) 413; Nel (1942) 9.
on *Polygonum aviculare* Linn., Stellenbosch, *du Plessis* (Stell. 546, v. d. Byl 2702).

Peronospora trifoliorum de Bary

Doidge & Bottomley (1931) 35, 57; Bottomley (1932) 21; Nel (1942) 9.
on *Glycine Max* Merr., Cedara, *Staples*, 17059.
Medicago sativa Linn., Grootfontein, 26083; Pretoria, *L. Turner*, 6935; Groenkloof,
Mellé, 9190, *Doidge*, 18071; Welverdiend, *Burgers*, 15535; Cedara, *Staples*, 17059;
Ixopo, *Hancock*, 15046; Kilgobbin, *Fannin*, (v. d. Byl 579) 31829; Stellenbosch, *du Plessis* (Stell. 585, v. d. Byl 2703).

Peronospora Viciae (Berk.) de Bary.

Doidge & Bottomley (1931) 47.
on *Pisum sativum* Linn., Ceres, 728; Cape Flats and Stellenbosch, *Dippenaar* (Stell. 860);
Grahamstown, *Pringle*, 34235.

Plasmopara viticola (Berk. & Curt.) Berl. & de Toni.

Pole Evans (1907 a) 166, (1908 c) 213, (1908 e) 124; Lounsbury (1907) 330;
Doidge & Bottomley (1931) 28; Hopkins (1930) 524, (1939 a) 48; Marloth
(1913) 24; Cardoso (1939) 45, (1945) 155.

on *Parthenocissus quinquefolia* Planch., Grahamstown, *Dewar*, 286.

Vitis vinifera Linn., Grahamstown, *Dewar*, 237; Graaff Reinet, *Mally*, 1534; Somerset East, *Dewar*, 313; Fort Beaufort, *Pole Evans*, 297; Cape Town, 223; Umzimkulu, *MacIntyre*, 10132; Barberton, *Lounsbury*, 1276; Lourenço Marques, 24340; Umbeluzi, Xinavane, *Guimarães*, Shamva (Rh. 812).

Sclerospora Butleri Weston

Weston (1933) 592.

on *Eragrostis aspera* Nees, Bulaki, Nyasaland, *E. J. Butler* (Type in Farlow Herbarium; ? *Eragrostis* sp., Pinetown.

Sclerospora graminicola (Sacc.) Schroet.

Wickens (1937) 690; Hopkins (1938 a) 100, (1939 a) 31; Doidge & Bottomley (1931) 35; Weston (1933) 587.

on *Pennisetum spicatum* Koern, Swallowfields (Rh. 3243).

Pennisetum typhoides Stapf & Hubb., Roodekop, *Clover*, 26691; Immerpan, *Todd*, 28823; Letaba, *Curson*, 28861; Zomba, 8950; without locality, *Curson*, 30464; Makwapala, near Zomba, *E. J. Butler*.

Setaria verticillata Beauv., Groenkloof, *Mackay*, 20347.

Sclerospora indica Butler

as *Sclerospora Maydis* (Rac.) Butler, Doidge & Bottomley (1931) 36.

on *Zea Mays* Linn., Naboomspruit, *McKay*, 20385; Pienaars River, *McKay*, 20425; North coast of Natal, 32497.

Sclerospora Sorghi (Kulk) Weston & Uppal

Hopkins (1938 a) 100, (1939 a) 44.

sub *Sclerospora graminicola* (Sacc.) Schroet., Doidge & Bottomley (1931) 31, 32, 59.

on *Sorghum caffrorum* Beauv., Pretoria, *du Preez*, 25910.

Sorghum Durra Stapf, Pretoria, *F. du Toit & Wager*, 25903.

Sorghum sudanense Stapf, Ntababane, 15506, 32496; Beestekraal, *Anderssen* 27754; Salisbury (Rh. 1950).

Sorghum verticilliflorum Stapf, Pretoria, *Lundie*, 15419; Moorddrift, *Kitchener*, 11876.

MUCORALES.

MUCORACEAE.

Circinella Sydowii Lendner

Lendner (1913) 29; Sacc. Syll. Fung. XXIV: 6; Stevenson & Rands (1938) 261.

in sugar solution, in gold mine, Johannesburg.

Mucor exitiosus Mass.

Massee (1901 a) 94, (1908 b) 197; Pole Evans (1907 a) 170; Anon. (1901) 850; Sacc. Syll. Fung. XVII: 495.

isolated from:

Nomadacris septemfasciata Serv., South Africa.

Mucor hiemalis Wehm.

on artificial medium, Cedara, *Ripley*.

Mucor mucedo Linn.

Thunberg (1800) 183, (1923) 756.
on plants, bread, etc., Cape, *Thunberg*.

Mucor racemosus Fres.

McAlpine (1899) 1213, (1900) 184.
? as *Mucor* sp., Howard (1902) 466, 469; *McMartin* (1935 a) 23.
on *Nomadacris septemfasciata* Serv., dead locusts, from ? Cape Town (more probably Natal).
Natal coast, *McMartin*.
isolated from coat of mine native, Robinson Deep (T.R.L. 428, det. Baarn).

Mucor Rouxii Calm.

Doidge (1909) 7, 8.
isolated from 'leting', made from malted grain of *Sorghum caffrorum* Beauv., from Basuto-land, *Doidge*.

Mucor stercoreus (Tode) Link.

Hydrophora stercoraria Tode, Kalchbrenner & Cooke (1880) 25.
on dung, Somerset East, *MacOwan* 487, 1299.

Rhizopus arhizus Alf. Fischer.

Hopkins (1938 d) 510, (1939 d) 116, (1939 a) 29.
on *Nicotiana Tabacum* Linn., on leaf during curing, S. Rhodesia, *Hopkins*.
on artificial medium, Cedara, *Ripley*.

Rhizopus Artocarpi (Berk. & Curt.) Rac.

Doidge & Bottomley (1931) 31, as *Rhizopus* sp.
? on *Artocarpus integra* Merr., on fruit, Barberton, *Pole Evans*.

Rhizopus nigricans Ehrenb.

V. A. Putterill (1921) 529, (1923 a) 334; du Plessis (1936) 15; Cardoso (1937) 156;
(1945) 154; Bates (1937 b) 189; Hopkins (1938 a) 99, (1939 a) pp.
? *Rhizopus stolonifer* Ehrenb., Hopkins (1932) 463.
Very common on decaying parts of plants, especially fruits, tubers and seedlings; see host index.

PILOBOLACEAE.

Pilobolus crystallinus (Wiggers) Tode

Nel (1942) 8.
on dung, Stellenbosch, *Verwoerd*, (v. d. Byl 1166).

CHOANEPHORACEAE.

Cunninghamella sp.

isolated from eggs of *Nomadacris septemfasciata* Serv., Pretoria, *Faure* 27545.

PIPTOCEPHALACEAE.

Syncephalastrum racemosum (Cohn) Schroet.

isolated from flannel, used underground in mine, Durban Roodepoort Deep (T.R.L. 216, det. Baarn).
on underground mine timber, New Modderfontein, (T.R.L. 253 det. Baarn).

MORTIERELLACEAE.

Haplosporangium bisporale Thaxter var.

St. John-Brooks (1936) 69.

isolated from *Phaseolus vulgaris* Linn., wilted plant, *Wager* (det. I.M.I.).

ENTOMOPHTHORALES.

ENTOMOPHTHORACEAE.

Empusa conglomerata Sorokin

Skaife (1921) 80.

on *Nephrotoma umbripennis* Alex., imago, Cedara, *Skaife*.**Empusa Fresenii** Nowak.on *Aphis* sp., on *Sorghum caffrorum* Beauv., Maritzburg, *Pole Evans*, 1387.**Empusa Grylli** Fres.

Pole Evans (1907 a) 168, (1907 d) 953; Marloth (1913) 24; Skaife (1921) 81, (1925) 298; van der Byl (1922 d) 283; Verwoerd (1931 a) 298; McMartin (1935 a) 119, (1935 b) 181; Schaefer (1936) 22; Cardoso (1937) 151; Hopkins (1938 a) 99.

Entomophthora Grylli Fres., Masee (1908 b) 197.on *Acridiidae* undet., Cedara, *Skaife*; Maritzburg, *Pole Evans*, 1481.**Aeolopus** sp., Hartbeestpoort, *Schaefer*, 33434.**Glaphyracris cyanez** Stall., Bizana, *Schaefer*.**Locustana pardalina** Walk., Bloemfontein, *Verwoerd*; Kalahari, *Mally* (Stell. 243).**Nomadacris septemfasciata** Serv., Natal and Transvaal, *Pole Evans*; widely distributed in Southern Rhodesia, *Hopkins*; Outjo, *Locust Officer*, 27549; Mposa area, *v. Wyk*, 27592; Okahandja, *Locust Officer*, 27550; Nampula, *N. de Fontoura*; Metonia, Moamba and Manhiça, *Cardoso*; Lourenço Marques, *Guimarães*; Cabo Delgado.**Oedaleus** sp., Natal, *Lea*.**Empusa Lecanii** Zimm.on *Dactylopius Opuntiae* Ckll., Natal, *Ripley* (det. Petch).**Empusa Muscae** Cohn

Skaife (1921) 78; van der Byl (1922 d) 283; Verwoerd (1931 a) 298; Hopkins (1938 a) 99; Nel (1942) 8.

on *Musca domestica* Linn., Bloemfontein, *Verwoerd*; Cedara, *Skaife*; Stellenbosch, *Brain* and *Verwoerd* (Stell. 279).**Muscidae** undet., Cedara, *Skaife*.**Anthomyidae** undet., Cedara, *Skaife*.**Stomoxys calcitrans** Linn., Umtali (Rh. 2951).**Empusa** sp.

Nel (1942) 8.

on *Naudauralea Tyrrhaea* Gram., Kluitjies Kraal, Wolseley, *v. d. Byl* 98.**Entomophthora Aphidis** Hoffm.

Skaife (1921) 83; Hopkins (1937 a) 99.

on *Aphis* spp., Cedara, *Skaife*; Salisbury (Rh. 2113).

Entomophthora apiculata Thaxt.

- on **Lepidoptera** : imagines of **Lycophotia muscosa** Geyer, of an undet. **Geometrid** and a **Lycaenid**: larvae of **Pachypasa capensis** Aur., Cedara, *Skaife*.
Diptera : imagines of a large **Anthomyid** fly and of **Nephrotoma unicingulata** Alex., Cedara, *Skaife*.
Coleoptera : imagines of **Trocalus fulgidus** Fabr. and of **Adoretus ictericus** Borm., Cedara, *Staples*.
Hemiptera : adults of **Locris arithmetica** Walk., Cedara, *Skaife*.

Entomophthora coronata (Cost.) Kev.

- Schaefer (1941) 241.
on **Camponotus** sp., Pretoria, *Schaefer*.

Entomophthora megasperma Cohn

- Skaife (1921) 84.
on **Euxoa segetis** Schiff., on larvae, Cedara, *Skaife*.

Entomophthora sphaerosperma Fres.

- Ullyett & Schonken (1940) 1, 6.
on **Plutella maculipennis** Curt., Pyramids, *Ullyett & Schonken*.

Entomophthora sp.

- on **Acanthopsyche Junodi** Heyl. Natal, causing extensive epidemics in 1923, *Ripley*, Cedara, 30443.