

**CONTRIBUTIONS TO THE FUNGUS
FLORA OF ESTONIA I**

BY

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The Phanerogams of Estonia have already been investigated quite in detail. As regards plant geography and plant sociology many parts of Estonia have been described, and we can get a mapped floristic survey of Estonia from the works of prof. T. Lippmaa (1932, 1935).

The Cryptogams of Estonia, on the contrary, especially the fungi, have been examined very incompletely. The earliest literary sources on the investigation of the fungi of Estonia are the publications of E. Lepik (1928, 1929).

The book of H. A. Dietrich, entitled "Blicke in die Cryptogamenwelt der Ostseeprovinzen" (1856 and 1859) is one of the first great works on the fungi of Estonia, containing 1092 species and 273 subspecies as well as many new species (spec. nov.). The title of the book suggests a survey of all the Baltic provinces, but in fact the work gives us only data for Estonia, because Dietrich had settled in this country in order to collect fungi. It is a pity that this work is out of date already and almost of no use for the modern explorer, because of the old synonymic and incomplete data.

After the publication of Dietrich's work there was a longer pause (1859—1892) in the research into fungi. 33 years later Gobi (1892) published a short list of rust fungi gathered in the north of Estonia.

A few years after that, in 1899, the Swedish mycologist Tychovestergren came to Estonia, to the Island of Saaremaa, the fruit of which sojourn was the publication of a detailed list of fungi (1930).

Some years passed, till F. Bucholtz (1916) spent two summers on the Island of Saaremaa, searching for fungi there and completing Vestergren's data.

Later Literature 1922—1937.

The study of the Estonian fungi became more intense after 1922 when the Phytopathological Experimental Station of the University of Tartu, founded by F. Bucholtz*), became the centre of the investigation into Estonian fungi. Though at present the chief subjects of study of that institution are plant diseases and parasite fungi, floristic problems are dealt with quite regularly.

On the Subject of Biochemistry.

Among the lately completed biochemical works there must be mentioned the publications of E. Lepik: on the "Differential Staining of Peronosporaceae" (1928), on the Biochemistry of Potato-Rot (1929), on Glycogen (1930), on the Biochemistry of Starch (1929), etc.

Prof. Hugo Kaho has published the results of many investigations on Potato-Biochemistry and viruses (1937).

Investigations into Plant Diseases.

Until now there have been published the following works on Plant Diseases: on *Puccinia ribesii caricis* by E. Lepik (1931), on *Sclerotinia trifoliorum* by R. Toomre (1934), on *Nectria galligena* by A. Kivilaan (1935), on *Plasmopara viticola* by E. Lepik, on *Synchytrium endobioticum* by E. Lepik (1935).

Next there must be mentioned phytopathological notes on the distribution of many plant diseases in Estonia by E. Lepik (1926, 1931, 1932, 1937), and others on the diseases of medical plants by E. Lepik (1935) and on the Fungus Flora of Cellars by E. Lepik (1926).

Systematic Investigations into the Fungi of Estonia.

In 1921 F. Bucholtz published a few notes on the fungi of Estonia, which was the last work of the mycologist before his death.

In 1935 E. Lepik brought out a List of Fungi found in the Isle of Runö (Ruhnu) in 1934.

*) Cf. the Bulletins of the Phytopathological Exp. Station Univ. Tartu, No. 13, 1932 and No. 44, 1937.

On *Ustilagineae* F. Bucholtz and O. Ekman (1918/19) published a work which not only deals with all the Baltic, but contains also very many data about Estonia.

The species of *Ergot-Claviceps* (5 species and 3 biological varieties of 52 nutritive plants) have been described by E. Lepik (1937).

A little earlier (in 1931) E. Lepik published a summary on *Polyporaceae*, and next may be mentioned a few data about the distribution of *Ustilago Oxalidis*, *Puccinia Komarowi*, *Elaphomyces cervinus* and *Phallus impudicus* in Estonia by E. Lepik. Finally, we must not forget the notes of E. Lepik on the nomenclature of Estonian fungi (1928, 1931, 1932).

The Higher Fungus Species of Estonia.

The higher Fungus Species of Estonia have been investigated by N. Witkowski; the result of these investigations was the publication of a book, containing some data (1935).

Cases of poisoning in Estonia which have been caused by poisonous fungi have been commented upon by E. Lepik (1935).

Exsiccata.

Among the Exsiccata which contain fungi that have been collected in Estonia may be mentioned the following:

Dietrich, H. A. Plantarum florum Balticae cryptogamarum cent. I—IX (1852—57).

Bucholtz, F. Fungi Rossici exsiccati, fasc. I, II, XI, XII (1915, 1916).

Vestergren, T. Micromycetes rariores selecti, fasc. 7—17 (1900—1901).

Käsebier, A. Eesti seened I (Estonian fungi) — (1926).

Lepik, E. Fungi Estonici exsiccati, fasc. I—IV (1931 — 1939).

The following contributions contain a list of the most remarkable fungi, discovered in Estonia during the last few years. These finds are of interest for those who wish to get acquainted with the Estonian fungus flora.

The greater part of the fungi mentioned in this list have been collected by the author himself. But part of the discoveries

have been made by other investigators, and in that case the finder's name is given in brackets. All the collected materials, so far as they have been kept intact, are to be found in the collections of the Phytopathological Experimental Station of the University of Tartu.

The following authors have been so kind to provide me with stuff for investigation:

Mr. H. Aasamaa (Tartu), Mr. S. Biider (Hara), Conservator K. Eichwald (Tartu), Mr. L. Enari (Tartu), Agr. A. Ennvere (Tartu — Raadi), Miss S. Kaaber (Tartu), Dr. T. Leisner (Tallinn), Drnd. V. Pärtelpoeg (Tartu), Dr. P. Reim (Pärnu — Audru), Dr. W. J. Reintal (Tallinn), Mr. R. Rõuk (Tallinn), Dr. B. Saarsoo (Lümanda), Dr. H. Salasoo (Tallinn), Mag. G. Sandur (Tartu), Mr. E. Sirgo (Tartu), Mag. R. Toomre (Tallinn), Mr. K. Tõnis (Hageri), Agr. G. Tõnisberg (Tartu — Raadi), Mr. N. Witkowski (Tartu), and Mr. A. Üksip (Tallinn).

I am greatly obliged to all the above mentioned investigators and herewith proffer my best thanks to all of them for the materials with which they have provided me.

Many species of *Polyporaceae* have been checked by Prof. V. Litschauer (Innsbruck).

The names of the species and host plants which constitute new Estonian records are prefixed by an asterisk (*).

New species (spec. nov.) and new hosts (hosp. nov.) are given in thick type.

Plasmodiophorales.

**Tetramyxa parasitica* Goeb.

On the leaves of **Zanichellia palustris* L. "Wormsö SO von Sviby, 5. VIII. 1924", leg. Johs. Gröntved, det. et public. Th. Arwidson in "Mykologische Beiträge" in Botaniska Notiser, Lund, 1936, p. 468.

Peronosporaceae.

Bremia lactucae Regel (1843); Bucholtz (1909) p. 167; Bucholtz (1916) p. 8; Treboux (1912) p. 92.

On the leaves of **Senecio Ledebouri* Sch. Bip., nov. hosp., at Tartu, in the Botanical Garden, 5. VIII 1935.

On the leaves of **Gaillardia pulchella* Foug., nov. hosp., at Tartu, in the Botanical Garden, 28. VIII 1936.

Note. American literature as well as European gives few data about the distribution of *Bremia Lactucae* on the *Gaillardia* sp. E. Mayor (1936 p. 106) mentions this fungus in 1934 and 1935 in Switzerland on *Gaillardia grandiflora*.

On the 29. III 1927 I gathered this fungus from *Gaillardia* sp. in Switzerland near Oerlikon (near Zurich) in a garden and on the 16. VII 1928 at Wiedikon (near Zurich) in a garden. Both the species are to be found in the herbarium of the Phytopathological Experimental Station at the University of Tartu.

Bremia lampsanae Sydow in *Annales Mycologici* 36, 1938, p. 321, Mycoth. german. No. 3091 (= *Bremia Lactucae* Reg. pr. p.); F. Bucholtz in *Verzeichnis Peronospor. Ostseeprovinz. Korrespbl. Vat. Ver. Riga* 52, 1909, p. 167.

On the leaves of *Lampsana communis* L. The following places where this fungus has been detected are named in the herbarium of the Phytopathological Experimental Station at Tartu:

On the island of Saaremaa: near the village of Rootsi-küla (6. VII 1908, leg. F. Bucholtz); near the village of Kaadla (Kadfeld) on the roadside along a field (12. VI and 15. VII 1909), by F. Bucholtz.

In the province of Tartumaa: at Tartu (18. VIII 1915, leg. Arefjew); at Tartu, in the Raadi park (6. VI 1925, leg. E. Lepik).

**Peronospora arenariae* (Berkeley) Tulasne (1846, p. 31); Gäumann Beitr. z. Monogr., 1923, p. 48.

On the leaves of **Moehringia trinervia* (L.) Clair. in Tallinn, in the Kadriorg park, 6. VI 1936.

**Peronospora berteroeae* Gäumann.

On the leaves of **Berteroa incana* (L.) DC. at Haapsalu, near Paralepa, on the railway track, 28. VII 1938.

Peronospora brassicae Gäumann (1918, p. 131).

On the leaves of **Brassica campestris* L. in the province of Viljandimaa, in Vana-Tänassilma, at a farm on Auaku, in a barley-field, in abundance, 27. VI 1936.

Peronospora buniadis Gäumann (1918) Beih. Bot. Cent. 35, Abt. I, p. 40, 132; Savulescu (1932) Ann. Mycol. 30, p. 371;

Vestergren (1903) p. 99; Bucholtz (1909) p. 169 (sub *Peronospora parasitica* Tul.); (1916) p. 9.

On *Bunias orientalis* L. at Tartu, in the Botanical Garden, 16. IX 1935; at Tartu, on the Raadi estate, 10. X 1935 (leg. A. Kivilaan).

**Peronospora calotheca* de By.

On **Asperula odorata* L. in the province of Tartumaa, at Kastre-Peravalla, in the forest for pract. training of the University of Tartu, section no. 57, 14. VI 1936.

**Peronospora consolidae* Lagerheim.

On the leaves of *Delphinium consolida* L. in the province of Harjumaa, near Viti between Keila-Joa and Suurupi, in a field, 25. VII 1938.

**Peronospora dentariae* Rabh.

On the leaves of **Cardamine impatiens* L. on the Paldiski peninsula, in a wooded meadow, 21. VII 1938.

Peronospora erysimi Gäumann.

On the leaves of **Erysimum hieraciifolium* L. in Tallinn, on Lasnamägi, near the Tartu road, 6. VI 1936.

**Peronospora hesperidis* Gäumann 1918, p. 135.

On the leaves of **Hesperis matronalis* L. at Tartu, in the Botanical Garden, 9. VII 36.

**Peronospora honckenya* Sydow.

On the leaves of **Honckenya peploides* (L.) Ehrh. in the province of Läänemaa, Pöösaspää (Spitham), on the shore, 26. VII 1938.

**Peronospora litoralis* Gäumann (1918); Beitr. zur Peronosp. (1923) p. 224; Savulescu (1932) in Annal. Mycol. 30, p. 364.

On the leaves of **Atriplex litoralis* L. in the province of Saaremaa, Vilsandi, on the seashore in a meadow, in abundance, 18. VI 1935.

On the leaves of **Atriplex calotheca* (Raf.) Fe. (det. K. Eichwald) on the Paldiski peninsula, on the Lahepere beach (22. VII 1938).

On **Atriplex hastata* L. on the Paldiski peninsula, on the Lahepere beach (22. VII 1938).

**Peronospora obovata* Bonorden; G ä u m a n n (1923) Beiträge, p. 60.

On the leaves of **Spergula maxima* Weihe, T a r t u, in a field at Raadi, 13. VII 1936.

On **Spergula sativa* Boenn, T a r t u, in a field at Raadi, 13. VII 1936.

On **Spergula vulgaris* Boenn, T a r t u, in a field at Raadi, 13. VII 1936.

Peronospora pratensis Sydow in G ä u m a n n (1923) Beiträge zu einer Monograph. d. Peronospora, p. 213; V e s t e r - g r e n (1903) p. 99; B u c h o l t z (1909) p. 170 (sub *Peronospora Trifoliorum* De Bary).

On *Trifolium medium* L. near T a r t u, at Mudaniku, in a wood, 16. VII 1935.

Peronospora Schleideni Unger.

On **Allium proliferum* Schrad. in the H a r j u m a a province, at Hageri (leg. R. Rõuk); has destroyed many plants.

Peronospora sordida Berkeley and Broome (1861); G ä u m a n n (1923) Beiträge z. Monogr. p. 153; T r e b o u x (1912) p. 93.

On the leaves of *Scrophularia nodosa* L. on the island of S a a r e m a a, at Kuressaare, in the park of the castle.

Plasmopara nivea Unger.

On the leaves of **Cicuta virosa* (L.) in the T a r t u district, in the Ulila river, 7. VII 1936.

On the leaves of **Sium latifolium* L. in the district of T a r t u, on the Vasula estate, in the river, rarely, 26. VII 1936.

Ascomycetes.

Claviceps microcephala Tulasne; L e p i k (1935) p. 8.

On *Deschampsia caespitosa* P. Beauv. at T a r t u, at Kvis- tental, 22. IX 1935; at K a s t r e - P e r a v a l l a, section no. 15, 29. IX 1935.

On *Molinia coerulea* (L.) M n c h. at T a r t u, at Kvis- tental, 22. IX 1935; at K a s t r e - P e r a v a l l a, Järvelg, often.

On **Agrostis vulgaris* With. at K a s t r e - P e r a v a l l a, 29. IX 1935, often.

On **Apera spica venti* P. Beauv. at T a r t u, at Raadi, 7. X 1935, not often; 14. X 1937, leg. A. E n n v e r e.

Claviceps purpurea Tulasne; L e p i k (1935) p. 6.

On *Agropyrum caninum* P. Beauv. in the province of T a r t u m a a, Kastre-Peravalla, Järvelg, section no. 18, 29. IX 1935, a few Sclerotia.

On *Alopecurus pratensis* L. at T a r t u, at Raadi, 7. X 1935, not often; in the bed of the Emajõgi near the estate of Müta, 24. X 1937.

On *Calamagrostis arundinacea* Roth. in the province of T a r t u m a a, at Kastre-Peravalla, Järvelg, 29. IX 1935.

On *Calamagrostis epigeios* Roth. in the province of T a r t u m a a, at Kastre-Peravalla, Järvelg, section no. 18, 29. IX 1935; T a r t u, in the Botanical Gardens, 7. X 1935.

On **Calamagrostis lanceolata* Roth., nov. hosp., in the province of T a r t u m a a, at Kastre-Peravalla, Järvelg, 29. IX 1935.

On *Calamagrostis neglecta* P. Beauv. in the province of T a r t u m a a, at Kastre-Peravalla, section no. 14, 29. IX 1935.

On *Festuca arundinacea* Schreb. at T a r t u, at Kvistental, 22. IX 1935.

On *Festuca gigantea* Vill. in the province of T a r t u m a a, at Kastre-Peravalla, section no. 17, 29. IX 1935.

On *Phalaris arundinacea* L. in the province of T a r t u m a a, at Kastre-Peravalla, section no. 18, 29. IX 1935.

On *Phleum pratense* L. at T a r t u, at Kvistental, 22. IX 1935; at Kastre-Peravalla, Järvelg, 29. IX 1935.

On *Poa compressa* L. at T a r t u, at Raadi, 7. X 1935.

On *Poa palustris* L. at T a r t u, at Raadi, 7. X 1935.

On **Trisetum flavescens* P. Beauv. at T a r t u, at Raadi, 7. X 1935, not often.

On **Alopecurus antarcticus* Wahl., nov. hosp., at T a r t u, in the Botanical Gardens of the University, 11. IX 1938.

On **Elymus arenarius* (L.) in T a l l i n n, on Lasnamägi, near the Ülemiste Lake, 27. VIII 1936 (leg. A. K i v i l a a n); on the P a l d i s k i peninsula, on the Lahepere beach, on the sand, 22. VII 1938.

On *Hierochloa odorata* (L.) Wahlenb. in the province of P ä r n u m a a, at Rapu, on the bank of the Reiu river, near Uulu, on the roadside, 24. VI 1937.

Geoglossum ophioglossoides (Ehrbg.) Rehm, in Pilze Deutschlands, Oesterreichs und der Schweiz (1896) p. 1156; Velenovsky, Monographia Discomycetum Bohemiae (1934) p. 376.

In the parish of Kadrina, on the "Kursoo" east border, VIII 1936 (leg. S. Kaaber).

**Naumovia abundans* T. Dobrosrakov.

On **Brunella vulgaris* L. at Tartu, Kvistental, 11. VI 1939 (leg. E. Lepik, conf. N. Naumow — Leningrad).

**Pyrenopeziza compressula* Rehm in Rabenhorst Kryptogamenflora Bd. I, Abt. III (1896), p. 618.

On the leaves and stalks of **Potentilla norvegica* L. at Tartu, at Vesneri, on a dry gravel hill, 12. IX 1937.

Taphrina alni incanae (Kühn) Magnus.

On *Alnus incana* L. on the Paldiski peninsula, 22. VII 1938.

**Taphrina aurea* (Pers.) Fr.

On the leaves of **Populus pyramidalis* in the town of Viljandi, VI 1936; at Pärnu, VII 1937.

Taphrina bullata (Berk. et Br.) Tul.

On the leaves of *Pirus communis* L. in the district of Tartu, at Kastre-Peravalla, Järvselg, 14. VII 1936.

Erysiphaceae.

Erysiphe aquilegiae DC.

Perithecia on the leaves of *Aquilegia vulgaris* (L.) at Tartu, in the Botanical Gardens of the University.

Erysiphe artemisiae (Wallr.) Greville in Flora Edinensis, 1824, p. 459, fig. 101 A, B, C; Blumer Erysiph. Mitteleuropas (1933) p. 280—282.

On the leaves of *Artemisia absinthium* L. at Tartu, in the Botanical Gardens, 29. X 1936.

On *Artemisia vulgaris* L. at Tartu, in the Botanical Gardens, 31. VII 1936.

Erysiphe cichoracearum DC.

On **Hieracium caesium* Fr. (det. A. Üksip) at Tartu, in the Botanical Gardens, 25. VII 1937.

On **Echinops sphaerocephalus* L. at T a r t u, Raadi, in a garden, 26. IX 1938.

On **Silybum Marianum* (L.) Gaertn. at T a r t u, in the Botanical Gardens, 29. IX 1938.

Erysiphe graminis DC.

On **Sieglingia decumbens* Bernh. in the province of T a r t u - m a a, near Meliste, in a dry pinewood, 23. VII 1935.

On the leaves of **Milium effusum* (L.) at T a r t u, in the Vasula wood, 26. VII 1936 .

Erysiphe Mayori Blumer (1933) p. 174.

Perithecia on the leaves of *Cirsium arvense* (L.) Scop. at T a r t u, at Luunja, on the ridge of a field, 18. VIII 1937.

Erysiphe nitida (Wallr.) Rabenh.

On *Aconitum napellus* L. (perith.) at T a r t u, in the Botanical Gardens, 27. VII 1936.

Erysiphe umbelliferarum De By.

On *Anthriscus silvestris* at T a r t u, in the Botanical Gardens of the University, 27. VII 1936; at T a r t u, in the Lohkva wood, 11. IX 1936; at E l v a, 13. IX 1936.

On the leaves of **Peucedanum oreoselinum* (L.) Moench. at T a r t u, on the dunes of Lohkva, seldom, 23. VIII 36.

Microsphaera lonicerae (DC.) Winter.

On **Lonicera caprifolium* L. at T a r t u, in the Botanical Gardens, 25. VIII 1937.

Oidium sp.

On **Senecio cruentus* DC. at T a r t u, in Kalmistu street, in a hothouse, 25. I 1936 (leg. R. Toomre).

On **Monandra digyna* L. at T a r t u, in the Botanical Gardens, 29. IX 1937.

**Oidium lini* B o n d a r z e w.

On **Linum usitatissimum* L. at T a r t u, in the Botanical Gardens, summer 1938 (Lepik, 1939).

Sphaerotheca epilobii (Wallr.) Sacc.

On *Epilobium roseum* Schreb. at T a r t u, in Roosi street, in a garden, 13. IX 1936.

**Sphaerotheca fugax* Penzig et Saccardo (1884); Blumer (1933) Die Erysiph. Mitteleurop. p. 100; Treboux (1912) p. 101 (sub *Sphaerotheca humuli* DC.)

On **Geranium palustre* L. at Tartu, in the Botanical Gardens, 8. VII 1935.

Note. This hostplant is missing in Blumer's (l. c.) list.

On the leaves of **Doronicum austriacum* Jacq. (Oidia) at Tartu, in the Botanical Gardens, 16. VIII 1935.

Sphaerotheca fuliginea (Schlechtendal) Salmon in Bull. Torr. Bot. Club. 29, 1902, fig. 28—31; Blumer Erysiph. Mitteleurop. 1933, p. 120—129.

On the leaves of *Bidens cernuus* L. in the province of Tartumaa, in the Ulila peat, 7. VIII 1936.

On **Veronica longifolia* in the province of Tartumaa, at Elva, 13. IX 1936; near the Kavilda river, in a meadow, 2. VIII 1936.

On **Crepis paludosa* (L.) Moench. in the province of Tartumaa, at Kastre-Peravalla, in the training forest of the University, section no. 132, 19. IX 1936.

**Uncinula necator* (Schwein.) Burr.

On the leaves of **Vitis vinifera* L. in the Virumaa province, in the hothouse of Oru castle, together with vine 1936. From Germany, imported by the firm J. Späht, 10. VIII 1936.

Basidiomycetes.

Bjerkandera fumosa (Pers. ex Fr.) Karst. [= *Leptoporus imberbis* (Bull.) Quel.].

On *Betula verrucosa*, on a rotten stump, at Tartu, in the Botanical Gardens, 31. X 1935 (det. V. Litschauer).

Clavaria pyxidata Pers. Roemer. New Mag. of. Bot., I, p. 117, 1794.

On *Picea excelsa*, on a rotten tree, in the province of Tartumaa, at Vana-Kuuste, 18. VIII 1935 (leg. Dr. T. Leisner, det. V. Litschauer, Innsbruck).

Coniophora betulae Karst. in Burt, Ann. Missouri Bot. Gard. 4, p. 255, 1917.

On conifers, on buildings at Tartu, IV 1936 (det. V. Litschauer).

Note. "No 10 shows a very interesting *Coniophora spec.* I think it is the *Coniophora betulae* Karst. Its fungus corresponds exactly to the notes which E. A. Bart in Ann. Missouri Bot. Gard. 4, p. 255, 1917 on this species gives after the investigation of the original. In any case, whether the fungus is something else than the species named by Bresadola, Bourdot and others *Coniophora betulae* Karst, it is only a kind of *Coniophora arida* Fr. with incrusted Hyphles." (V. Litschauer, Innsbruck.)

Coniophora puteana (Fr.) Karst (= *Coniophora cerebella* Pers.).

On *Picea excelsa* Link, on rotten wood, on buildings, at Tartu, in Tähe street, 23. X 1935 (leg. N. Witkowski, det. V. Litschauer).

Coriolus pergamenus (Fr.) Pat. Ess. tax. p. 94.

On *Betula sp.* at Tartu, in the Ropka forest, 31. X 1935; in the province of Tartumaa, at Kastre-Peravalla, section no. 117, VIII 1935 (leg. N. Witkowski, det. V. Litschauer).

Coriolus pubescens (Scum.) Quéf.

On *Betula verrucosa* at Tartu, in the Raadi park, 6. XII 1935 (det. V. Litschauer).

Coriolus unicolor (Bull.) Pat. Ess. tax. p. 93 (= *Daedalea unicolor* Fr.).

On *Quercus pedunculata* at Tartu, in Vallikraavi street, 19. X 1935 (leg. N. Witkowski, det. V. Litschauer).

Coriolus unicolor (Bull.) Pat. *var. *irpicoides* V. Litschauer (in litt.), steril!

On *Betula pubescens* at Tartu, at Kastre-Peravalla, in the training forest of the University, section no. 151, 26. VIII 1935 (leg. N. Witkowski, det. V. Litschauer).

Cortitium evolvens (Pers.) Fr. (= *C. laeve* Pers.).

On *Corylus avellana* (L.) at Tartu, in the Raadi park, 4. III 1936 (det. V. Litschauer).

Daedalea quercina Pers.

On *Quercus robur* (L.) in the Pärnumaa province, at Valgeranna (Doberan), in a mixed wood, 23. VI 1936.

Gloeophyllum trabeum (Pers. ex. Fr.) Murr. [= *Trametes trabea* (Pers.) Bres.].

On *Pirus malus* (L.) at T a r t u, in Roosi street, in a garden, on the half-dry trunk of an apple-tree, 27. X 1935 (det. V. Litschauer, Innsbruck).

Gloeoporus amorphus (Fr.) Clem. et Shear. [= *Leptoporus amorphus* (Fr.) Quel.].

On *Picea excelsa* L. near T a r t u, in the forest of Maramaa, on an old stump, 6. I 1936 (det. V. Litschauer).

Trametes serialis Fr. var. *resupinata* (= *Poria callosa* Fr.).

On *Picea excelsa* Link., on rotting wood, at T a r t u, in the Mellin Hospital, 3. IV 1936 (leg. N. Witkowski, det. V. Litschauer).

Uredinales.

**Aecidium circaeae* Cesati et Mont. in Montagne, Sylloge gen. spec. Crypt. 312 (1856).

On the leaves of **Circaea alpina* L. in the province of T a r t u m a a, at Kastre-Peravalla, in the training forest of the University of Tartu, section no. 106, 12. VI 1937.

Aecidium conorum-piceae Rees.

On *Picea excelsa*, at O t e p ä ä, Pühajärve, 22. VIII 1937; in the province of V i l j a n d i m a a, at Paistu, 28. VIII 1937; at K a s t r e - P e r a v a l l a, 19. IX 1937.

Cronartium ribicola Fischer.

II, III on the leaves of **Ribes rotundifolia* Misch. (Am. bor.) at T a r t u, in the Botanical Gardens, 25. VIII 1937.

II, III on **Ribes petraeum* Wulf. (Sibir. Altai) at T a r t u, in the Botanical Gardens, 25. VIII 1937.

II, III on **Ribes vulgare* Lam. (Europ. occ.) at T a r t u, in the Botanical Gardens, 25. VIII 1937.

Gymnoconia interstitialis (Schl.) Lagerh.

Teliosp. on the leaves of *Rubus saxatilis* L. in the province of T a r t u m a a, in the Ilmatsalu forest, 23. VII 1936; in the province of H a r j u m a a, at Rapla, in the Lipisto fir-wood, 27. IX 1936 (leg. H. A a s a m a a); in the province of T a r t u m a a, in the Kastre-Peravalla forest, section no. 106, 19. IX 1936.

**Melampsora vernalis* Niessl.

II: on the leaves of **Saxifraga granulata* L. at P e t s e r i, in

the vally of Kamenka, about 2 km from the monastery, 29. V 1935 (leg. K. Eichwald).

Phragmidium potentillae (Pers.) Karst.

Teliospores on the leaves of **Potentilla alpestris* Haller fil. in the province of Harjuma a, at Jägala, on an old sand dune, 29. X 1936 (leg. H. Aasama a).

On **Potentilla Tabernaemontani* Asch. II, III at Tartu, in the Botanical Gardens, 25. VIII 1937.

Phragmidium rubi (Pers.) Wint.; Bucholtz (1916) p. 17.

On the leaves of *Rubus caesius* L., teliosp. in the province of Harjuma a, at Jägala-Joa, 29. X 1936 (leg. H. Aasama a).

**Puccinia absinthii*, f. sp. *artemisiae* Klebahn, Krypt. Mark Brandenb. V^a, p. 436.

On the leaves of **Artemisia vulgaris* L. in the province of Harjuma a, on the bank of the Jägala river, on 26. IX 1936 (leg. H. Aasama a).

**Puccinia asperulae odoratae* Wurth.

On the leaves of **Asperula odorata* L. in the province of Viruma a, Ontika, 1. X 1937.

Puccinia Baryi (Berk. et Br.) Winter (1884); Sydow (1904) Monogr. Ured. I, No. 1052; Bucholtz (1905) p. 20, (1916) p. 12.

On **Anemone silvestris*, teliosp. in Tallinn, at Rannamõis, on the flintshore, in abundance, 7. VI 1936; at Uue-Irboska, Halohhahnja estate, 7. VIII 1937.

II, III on the leaves of **Brachypodium silvaticum* Koern. et Schult. at Haapsalu, in Paralepa, in a wooded meadow, 28. VII 1938.

On the leaves of **Pulsatilla pratensis* Mill., uredo- and teliosp. 29. X 1936, in the province of Harjuma a, at Jägala (leg. H. Aasama a).

Puccinia chaerophylli Purt.

On **Torilis anthriscus* Gmel., nov. hosp. Uredo- and teliosp. in the province of Harjuma a, at Jägala, leg. H. Aasama a 26. IX 1936, det. E. Lepik, test. H. Sydow (Berlin).

On the banks of the Jägala river in the wood, 200 m below the waterfall (in the lower course of the river).

Note. *Torilis anthriscus* Gmel. is a new host for *Puccinia chaerophylli*. The fungus has been checked by Mr. H. Sydow. Material is to be found in the collections of the Phytopathological Experimental Station of the University of Tartu, while a doublet of the said material has been sent to Mr. H. Sydow, Berlin.

Puccinia chrysosplenii Grev.

Teliospores on the leaves of *Chrysosplenium alternifolium* L. in the Harjumaa province, near the Jägala bank of the river, 30. X 1936 (leg. H. Aasamaa).

Puccinia caricis (Schum.) Rebert.; Sydow (1904) Monogr. Ured. I, p. 648; Gobi (1892) p. 92; Treboux (1912) p. 96; Bucholtz (1916) p. 13; Arefjev (1917) p. 79.

On *Carex glauca* L. II, III at Tartu, in the Botanical Gardens, 7. IX 1934.

On cultivated **Carex atrata* L., nov. hosp., at Tartu, in the Botanical Gardens, 13. IX 1934.

Note. Arctic *Carex atrata* has been cultivated on the ridge of the Botanical Gardens already for a long time. Sometimes in summer it has been infected by rust. It is not known on which plant this rust-fungus produces aecidies.

Puccinia cirsii Laschin Rabh. Fungi Europ. No. 89; Sydow, Monogr. Ured. I, 1904, p. 55.

On **Cirsium acaule* All. at Haapsalu, at Holm, in a dry hayfield on the shore.

II and III on the leaves of **Silybum Marianum* (L.) Gaertn. at Tartu, in the Botanical Gardens, 29. IX 1938.

**Puccinia conii* (Strauss) Fuckel.

On **Conium maculatum* L. at Haapsalu, on Holm, in a flint-quarry.

Puccinia coronata Corda.

On **Trisetum sibiricum* Rupr. II, nov. hosp., at Tartu, in the Botanical Gardens, 10. IX 1936—1939.

Note. Already since 1936 *Puccinia coronata* can regularly be found on *Trisetum sibiricum* Rupr. in the Botanical Gardens of the University of Tartu in the same place, but only uredospores. Teliospores are not to be found, either late in autumn or in winter. Among the uredospores

there are also paraphyses in abundance. According to H. Sydow this is greatly different from *Puccinia triseti*.

Trisetum sibiricum Rupr. is a new host for *Puccinia coronata*, plenty of which rust is to be found in Estonia.

Puccinia crepidis Schroeter (1887).

II, III on the leaves of **Crepis mollis* (Jacq.) Aschers. var. *succisifolia* (All.) Aschers. at Tartu, near the Vasula lake, in a hayfield, SW of the Allika farm, 6. VII 1937, leg. L. Enari (in Herbar. Mus. Bot. Univ. Tartu).

Puccinia hieracii (Schum.) Mart.

On **Hieracium auricula* L. in the province of Harjuma, at Rapla, Lipstu, Põldmaa, on the border of a wood and a bog in a ditch, 23. VIII 1937 (leg. H. Aasamaa).

On **Hieracium caesium* Fr. in Saaremaa, Kihelkonna, 23. VI 1938 (leg. B. Saarsoo, hosp. det. A. Üksip); in Tallinn, Pirita, 9. VII 1938 (leg. A. Üksip).

On **Hieracium cymosum* L. in Saaremaa, Kihelkonna, 9. VII 1927 (leg. A. Üksip).

On **Hieracium galbanum* Dt. at Haapsalu, Pullapää, 9. VIII 1938 (leg. A. Üksip).

On **Hieracium integratum* Dt. in the province of Virumaa (Kasperwiek), 21. VII 1915 (leg. Rud. Lehibert, hosp. det. A. Üksip).

On **Hieracium integratum* Dahlst., ssp. *Hjeltii* Norrl. (det. A. Üksip) in the province of Pärnumaa, at Audru, in a damp mixed wood, 27. VII 1937.

On *Hieracium pilosella* L. at Elva, Vapramäe, 18. VI 1936 (leg. A. Üksip).

On **Hieracium piloselloides* Vill. (det. A. Üksip) at Tartu, in the Botanical Gardens, 25. VIII 1937.

On **Hieracium pubescens* (Lindbl.) Fr. (det. A. Üksip) at Tartu, in the Botanical Gardens, 25. VIII 1937.

On **Hieracium sagittatum* (Lbg.) Dahlst. (det. A. Üksip) at Tartu, in the Botanical Gardens, 14. VII 1937; in the province of Viljandimaa, near the village of Päre, on a hillside, 24. VI 1938.

Puccinia leontodontis Jacky (1898); Sydow, Monogr. Ured. I, No. 176; Dietrich (1856) p. 279, 288; Vestergren (1903) p. 89; Bucholtz (1905) p. 50, (1916) p. 14.

On the leaves of **Leontodon hispidus* L. uredo- and teliosp. in the Harjuma a province, on a bank of the Jägala river, near Jõelähtme, 29. X 1936 (leg. H. A s a m a a).

Puccinia lolii Niels. (= *Pucc. coronifera* Kleb.).

II, III on the leaves of **Alopecurus antarcticus* Wahl., nov. hosp., in the Botanical Gardens of the Tartu University, 9. IX 1937.

**Puccinia picridis* Hazsl. in Brand- u. Rostpilze Ungarns 1877.

II on **Picris hieracoides* (L.) in the province of Viljandi- m a a, in a ditch near the Uue-Tänassilma road, 27. VI 1936.

**Puccinia rigensis* Bucholtz, 1905, p. 39.

I, II, III on the leaves of **Ostericum palustre* Bess. at P ä r n u, on the bathing-beach, 30. VI 1937.

Puccinia taraxaci Plowr.

On the leaves of **Taraxacum dilatatum* Linb. f. (det. Dr. B. S a a r s o o).

On the island of Saaremaa, at Kihelkonna, near the Pilguse hospital, 19. V 1934 (leg. Dr. B. S a a r s o o).

Puccinia thulensis Lagerh. (1904).

I on *Trollius europaeus* L. at T a r t u, in the Vasula forest, 24. V 1936.

Puccinia urticae-caricis (Schum.) Reb.

II on the leaves of *Carex canescens* L. in the province of T a r t u m a a, at Puhja, in the Sangla swamp, 19. VII 1936.

**Uromyces lilii* (Link) Fuckel.

On leaves of **Lilium candidum* L. at P ä r n u, in a garden, VI 1938 (leg. A. J ü r v e t s o n, Pärnu).

Note. Last spring A. J ü r v e t s o n made known the outbreak of a new disease in the gardens of Pärnu. Closer investigation showed that it was Lily-Rust [*Uromyces lilii* (Link) Fuckel]. White lilies (*Lilium candidum* L.) were badly infected by it.

Plants that are suffering from this disease lose much of their beauty, because the leaves tainted with rust have to be cut off. The plants themselves become weak, fade away and do not blossom.

According to Mr. J ü r v e t s o n's report in the spring of 1937, lily-

rust destroyed the lily-beds in the gardens of Pärnu in the course of a few days.

In 1938 the plants were still suffering from it, so that of a hundred lily-plants only 8 began to blossom.

Lily-rust is a most common plague in Middle-, West- and South-Europe. How and when it first came to Estonia and just to Pärnu has not been found out until now.

Mr. U. Oidrema, Gardening-Counsellor of the Agricultural Institute at Pärnu, tried to clear up the matter. He writes the following about it:

Many years ago this disease began to spread in many gardens at Pärnu. Mr. Jürvetson first noticed it in 1932. In the beginning it was of a lighter kind, growing stronger from year to year, coming to a climax in 1937 when very many leaves were destroyed. In 1938 the disease began to decline. Thus it is probable that it has been at Pärnu over ten years already, because garden-lilies have been cultivated there for about a score of years.

Most probably the new disease came to Estonia on lily-bulbs suffering from it, brought to Estonia from Middle- or West-Europe (Lepik, 1939).

**Uromyces lupinicolus* Bubák (1902); Sydow (1910) Monogr. Ured. II, p. 114, 358; Klebahn (1914) in Krypt. Mark Brandenb. Vol. 5, p. 238.

II on **Lupinus angustifolius* L. at Tartu, at Raadi, in a field. This rust fungus has seemingly come to Estonia in later years, because earlier authors do not mention its presence in Estonia or in Latvia or Lithuania. This species is also missing in Arefjew's work: *Uromyces* in the Baltic States, 1916. The host-plant is seldom to be found in Estonia in cultivated fields.

Uromyces rumicis (Schum.) Wint. (1884); Sydow (1910) Monogr. Ured. II, p. 241; Dietrich (1858) p. 491; Treboux (1912) p. 99; Gobiet Tranzschel (1892) p. 71; Arefjew (1916) p. 139.

II, III on **Rumex alpinus* L. in the Botanical Gardens of the Tartu University.

Uromyces verruculosus Schroeter (1872); Sydow (1910) Monogr. Ured. II, p. 214; Arefjew (1916) p. 141.

Uredo stages on cultivated *Melandryum rubrum* and *Melandryum album* at Tartu, on the Raadi estate, 7. X 1935.

Ustilaginales.

Cintractia caricis (Pers.) Magn.

On **Carex caryophyllea* Lat. (= *C. verna*) in the province of T a r t u m a a, Reola, 9. VI 1939 (leg. A. E n n v e r e).

On *Carex sparsiflora* (Wahlenb.) Stendel (hosp. det. Dr. K ü k e n t h a l) in the province of P ä r n u m a a, in the parish of Halliste, at Rabamänniku, near "Areiko" farm, 22. VI 1930 (leg. Dr. W. J. R e i n t a l).

On *Carex limosa* L. in the province of P ä r n u m a a, on the Tolkuse moor, 24. VI 1936, seldom.

**Graphiola phoenicis* Poiteau.

On the leaves of **Phoenix dactylifera* L. at Viljandi, on a palm, in Mr. J o h n M e o s' lodging, 17. IV 1938.

**Ustilago salvei* Berk. et Broome.

On the leaves of **Dactylis glomerata* L. at T a r t u, in the Raadi park, 3. VI 1939.

Fungi imperfecti.

**Alternaria grossulariae* Jacz.

On the leaves and berries of **Ribes grossularia* at T a r t u, in a garden, 12. VII 1938.

Alternaria solani Sor. (= *Macrosporium solani* Ell. et Mart.).

On the leaves of cultivated *Solanum tuberosum* L. at T a r t u, on the Raadi estate, 8. IX 1932, 2. VIII 1935 (leg. E. L e p i k); 14. VIII 1935 (leg. A. K i v i l a a n).

Alternaria tenuis Nees.

On the seeds of *Populus tremula* L. at T a r t u, on the Raadi estate, 31. VIII 1926 (leg. P. R e i m).

**Ascochyta Calystegiae* Sacc.

On the leaves of **Convolvulus sepium* at T a r t u, in the Raadi park, 14. VIII 1925.

**Ascochyta Heraclei* Bresad (1900); Allescher (1903) in R a b e n h o r s t Krypt. Part 7, p. 875.

On the leaves of **Heracleum pubescens* Hasl. in the Botanical Gardens of the University of T a r t u, 6. VIII 1935.

**Ascochyta lethalis* Ell. et Bart. in R. E. S t o n e, Ann. Myc. 10, 1912, p. 588; S a c c a r d o Syll. fung. 25, 1931, p. 332.

On the leaves of **Melilotus officinalis* in the province of Harjuma, at Keila, 19. VI 1938.

**Ascochyta Rostropii* Diedicke (1915) in Krypt. Mark Brandb. Vol. 9, p. 395.

On the leaves of **Sambucus racemosa* L. in the province of Tartumaa, in the Vedu forest, 19. VII 1935.

**Ascochyta urticae* A. L. Smith et J. Ramsbottom (1914); Saccardo Syll. fung. 25, p. 341.

On the leaves of **Urtica pilulifera* L. at Tartu, in the Botanical Gardens of the University of Tartu, 14. VIII 1935.

**Ascochyta Weissiana* Allescher (1901) in Rabenhorst Krypt. Part 6, p. 647.

On the leaves of **Impatiens nolitangere* L. in the province of Tartumaa, at Kastre-Peravalla, Järvelg, 25. VIII 1935.

On **Impatiens parviflora* L. at Tartu, in the Raadi park, 20. VIII 1935, and at Saadjärve, near Tartu, 11. VIII 1935 (leg. Dr. H. Salasoo).

Note. This species is described by Allescher (l. c.) on cultivated *Impatiens balsamina*. In my collections this fungus resembles the original diagnosis, only the conides of my material are a bit shorter — 8—11 μ long, while Allescher (l. c.) notes a length of 10—16 μ .

Botrytis cinerea Pers.

On **Senecio Ledebouri* Sch. Bip., nov. hosp., in the Botanical Gardens of Tartu, 30. VII 1935.

On **Solanum tuberosum* L. at Tartu, on the Raadi estate, 2. VIII 1935.

On **Paeonia Mlokosiewiczii* Lomak., nov. hosp., in the Botanical Gardens of Tartu, 7. IX 1935.

On **Senecio cruentus* DC at Tartu, on Kalmistu street, in a hothouse (leg. Rich. Toomre), 25. I 1936.

**Botrytis tulipae* (Lib.) Lind.

On the leaves of **Tulipa silvestris* L. at Tartu, in the Botanical Gardens, 24. V 1937.

**Cercospora campi siliü* Spegaz. in Michel. II, 1880, p. 171; Lindau in Rubenhorst Krypt. Part 9, p. 115.

On the leaves of **Impatiens nolitangere* L. in the province of T a r t u m a a, at Kastre-Peravalla, Järvelg, 19. IX 1936.

**Cercospora meliloti* Oud.

On the leaves of **Melilotus albus* Desr. in the province of H a r j u m a a, at the Peetri fortress, between Tallinn and Keila, 20. VII 1938; Klooga, on the Lohusalu coast, 20. VII 1938.

Cercospora mercurialis Passer. var. *latvica* Lepik (1933), Sitzungsberichte der Naturf.-Ges. bei der Universität Tartu 39, 1932, Chapt. 3—4, p. 152—153.

On *Mercurialis perennis* L. in Mudaniku forest, near T a r t u.

Note. *Cercospora mercurialis* var. *latvica* possesses noticeably longer conides: 58—130 μ long, 4—6 μ in diameter, 8—15-septate, while in *Cercospora mercurialis* Passer. the conides are 50—80 μ long, 5—6-septate.

**Cercospora microsora* Sacc. (1880); Lindau (1910) in R a b e n h o r s t Kryptog. Part 9, p. 117.

On the leaves of *Tilia platyphylla* Scop. in the province of T a r t u m a a, at Kastre-Peravalla, Järvelg, 24. VII 1935.

**Cercospora nasturtii* Passer. in Hedwigia 16, 124 (1877); R a b e n h o r s t Krypt. Part 9, p. 99.

On the leaves of **Nasturtium amphibium* R. Br. at T a r t u, on the Vasula estate, in the river, 30. VIII 1936.

**Cercospora opuli* (Fuck.) Lindau in R a b e n h o r s t Krypt. Part 9, p. 136.

On the leaves of **Viburnum opulus* L. at T a r t u, in the Kärevere wood, 29. VII 1937.

Note. Differs because of longer spores: 30—95 \times 3—5 μ , 2—8-septate. According to Lindau (l. c.) the length of the spores 40—60 μ , 3—5-septate.

**Cercospora radiata* Fuck.

On the leaves of **Anthyllis vulneraria* L. near Tallinn, on the Paldiski road, 19. VII 1938.

**Cercospora zebrina* Passer. (1877); Lindau (1910) in R a b e n h o r s t Kryptog. Part 9, p. 112.

On the leaves of **Trifolium agrarium* L. at T a r t u, in the Mudaniku forest, 16. VII 1935.

**Cercospora virgaureae* (Thüm.) Lindau (1907) in Rabenhorst, Krypt. Part 7, p. 428.

On **Solidago virga aurea* L. near Tartu, from the Vasula wood, 21. VI 1935; in the province of Tartumaa, at Kastre-Peravalla, Järvselg, 24. VII 1935; in the province of Tartumaa, at Kavilda, in a dry wood, 19. VII 1936.

**Cladosporium album* Dows.

On the leaves of cultivated **Lathyrus odoratus* L. at Tartu, on the Raadi estate, in the garden, 22. VIII 1925; 3. IX 1925; 6. X 1925; 10. IX 1935.

Note. This disease was noticed first in summer 1925, when *Lathyrus odoratus* was abundantly covered with fungi. In the following years the fungus has been found with varying frequency.

Cladosporium graminum Corda (1837); Lindau (1907) in Rabenhorst Kryptog. Part 8, p. 815.

On the leaves of **Milium effusum* L. in the province of Tartumaa, in the Kastre-Peravalla forest, 24. VII 1935.

Fusicladium depressum (Berk. et Br.) Lindau.

On the leaves of *Angelica silvestris* (L.) in the province of Tartumaa, in the Ulila peat-bog, 2. VIII 1936; at Tartu, in Ilmatsalu wood, 23. VII 1936.

**Fusicladium radiosum* (Lib.); Lindau (1907) in Rabenhorst Krypt. Part 8, p. 777.

On the leaves of **Populus alba* L. at Tartu, in the Mita park, 22. IX 1935.

Graphium pallescens (Fuckel); Lindau (1910) in Rabenhorst Kryptog. Part 9, p. 361.

On the leaves of *Stellaria nemorum* (L.) in Tallinn, at Rannamõisa, on the damp slope of a hill on the seashore, 18. VI 1936.

**Hendersonia riparia* Sacc.; Diedicke (1915) in Krypt. Mark Brandb. Vol. 9, p. 650.

On the leaves of **Carex riparia* Curt. in the province of Tartumaa, at Kastre-Peravalla, Järvselg, section no. 56, 26. VII 1935.

**Microdiplodia mamma* Allescher; Diedicke, Pilze in Krypt. Mark Brandenb. (1915) Vol. 9, p. 595.

On **Ligustrum vulgare* (L.) at T a r t u, 6. IX 1938 (leg. F. D a u g u l l).

**Microdochium phragmitis* Syd. Ann. Mycol. 22, 1924, p. 267 (det. G. v. M o e s z, Budapest).

On the leaves of **Phragmites communis* L. on the island of R u h n u (Runö), on the seashore, 18. VI 1934.

**Ovularia Schwarziana* Mangus (1900); Lindau (1907) in R a b e n h o r s t Krypt. Part 8, p. 245.

On the leaves of **Vicia villosa* (Roth.) at T a r t u, on the Raadi estate, in a field, in abundance, 29. VII 1935.

**Pestalozzia lupini* Sorauer (1898), Zeitschr. f. Pflanzenkr. 1898, p. 266.

On **Lupinus perennis* L. at T a r t u, in the fields of the Raadi estate, 13. VIII 1935.

**Phoma acicola* (Lév.) Sacc.

On **Pinus silvestris* L. in the province of V i r u m a a, in the Sagadi forest, 20. III 1937 (leg. G. S a n d u r).

**Phyllosticta alliariifoliae* Allescher (1901) in R a b e n h o r s t Krypt. Part 6, p. 109.

On the leaves of cultivated **Campanula alliariifolia* Reichb. at T a r t u, in the Botanical Gardens, 6. IX 1934, 10. VIII 1935, in abundance.

**Phyllosticta ambrosioides* Thümen f. *santonensis* P. Brun. (1888); Allescher (1903) in R a b e n h o r s t Krypt. Part 7, p. 758.

On the leaves of cultivated **Chenopodium ambrosioides* L. at T a r t u, in the Botanical Gardens, 31. VII 1935.

Note. This plant is used as a medicine. By the influence of *Phyllosticta* many white spots appear on the leaves and stalks of the plant, a great many of which are destroyed by the disease. In 1935 cultivation suffered much from this disease.

**Phyllosticta antirrhini* Sydow in Hedwigia 38, 1899, p. 134.

On the leaves of **Antirrhinum majus* L. at T a r t u, in the Botanical Gardens, 20. VII 1937.

**Phyllosticta cannabis* (Kirchner) Speg.; Allescher (1901) in R a b e n h o r s t Krypt. Part 6, p. 109.

On the leaves of cultivated **Cannabis sativa* L. at T a r t u, on the Raadi estate, 27. VIII, 20. IX 1935.

Note. Allescher (l. c.) notes that until now nothing is known about the fruit and the colour of the spores. My fungi have spores of $4-6 \times 2-3 \mu$, the hyalins on both ends rounded, with two oildrops. The ovaries, $40-60 \mu$ in diameter, in the fibre of the plant are hardly discernible.

**Phyllosticta cathartici* Sacc.

On the leaves of **Rhamnus cathartica* L. in the L ä ä n e m a a province, in a copse near the Rohuküla harbour, 27. VII 1938.

**Phyllosticta corrodens* Passer.; S a c c a r d o Syll. fung. 10, p. 125; Allescher (1901) in Rabenhorst Krypt. Part 6, p. 113.

On the leaves of cultivated **Clematis integrifolia* L., nov. hosp., in the province of T a r t u m a a, at Kastre-Peravalla, Järvselg, 24. VIII 1935.

On **Clematis vitalba* L. in the province of T a r t u m a a, at Kastre-Peravalla, Järvselg, 24. VIII 1935; at T a r t u, at Raadi, 16. VIII 1935.

Note. The conidia are a bit shorter, $6-8 \mu$ long, with two clear oildrops on both ends.

On *Clematis vitalba* the fungus produces spots, surrounded by clean brown rings, while on *Clematis integrifolia* there is a growing brown ring on the trees.

**Phyllosticta dulcamarae* Sacc.

On the leaves of **Solanum dulcamara* (L.) at T a r t u, in the Botanical Gardens of the University, 15. VII 1936.

**Phyllosticta hedericola* Dur. et Mont.

On the leaves of **Hedera Helix* L. in the province of S a a r e m a a, on the peninsula of Sörve, 17. VI. 1935.

**Phyllosticta hieracii* Allescher et Sydow in Hedwigia 36, p. 159.

On the leaves of **Hieracium sagittatum* (Lindb.) Dahlst. (det. A. Üksip) at T a r t u, in the Botanical Gardens, 14. VII 1937.

**Phyllosticta Leucanthemi* Speg.

On the leaves of **Chrysanthemum macrophyllum* Walst. et Kit., nov. hosp., in the Botanical Gardens of the University of T a r t u, 15. VIII 1936.

**Phyllosticta lychnidis* A. Bond.

On the leaves of cultivated **Lychnis chalcedonica* L. at Tartu, in the Botanical Gardens, 30. VII 1935 (test. A. Bondarzew, Leningrad).

**Phyllosticta negundinis* Sacc. et Speg.; Allescher (1901) in Rabenh. Krypt. Part 6, p. 17.

On the leaves of cultivated **Acer spicatum* Lam. var. *ukurundiense* (Trautv. et Mey) Maxim. (hosp. det. K. Eichwald) at Tartu, in the Botanical Gardens, 24. IX 1935.

**Phyllosticta opuli* Sacc.

On **Viburnum opulus* L. at Tartu, in the Botanical Gardens, 1. VIII 1935.

**Phyllosticta Otites* Brun.

On **Silene Otites* Sm. on the Annemõis estate near Tartu, 4. VIII 1935.

**Phyllosticta rubi-odorati* Bub. et Kab. in Hedwigia 52, 1912, p. 341; Saccardo Syll. fung. 25, 1931, p. 68.

On the leaves of **Rubus odoratus* L. at Tartu, in the Botanical Gardens, 15. VI 1936.

**Phyllosticta sojaecola* Massal.

On the leaves of cultivated **Glyzine soja* (L.) Sieb. et Zuck. at Tartu, on the Raadi-estate, 7. IX 1935.

**Phyllosticta verbasci* Sacc.

On the leaves of **Verbascum thapsiforme* Schrad. at Tartu, in the Botanical Gardens of the University, 9. VII 1936.

**Ragnhildiana scandicearum* (Magn.) Vassil. in Vassiljevsky et Karakulin, Fungi imperf. parasit. I, Mosqua, 1937, p. 374.

On the leaves of **Anthriscus silvestris* Gmel. in the province of Harjuma, at Mäeküla, near Tallinn, on a dry roadside of the Paldiski road, 19. VII 1938.

**Ramularia alismatis* Fautr.

On **Alisma plantago* L. at Tartu, at Mudaniku, in a swamp-ditch, 9. VII 1936.

**Ramularia barbareae* Peck. (1888) in 40th Ann. State Mus. N. J. p. 63 (= *R. cochleariae* f. *barbareae* Sydow in Myc. march. 3286).

On the leaves of **Barbarea stricta* Andr. in the province of Viljandimaa, at Oiu, along the road, 29. VII 1930 (leg. et det. E. Lepik, conf. H. Sydow).

On the leaves of **Barbarea arcuata* Reichb. (test. T. Lippmaa) in the Botanical Gardens of the University of Tartu, 21. VII 1936.

On **Barbarea vulgaris* in the province of Harjumaa, between Keila and Tallinn, along the sides of the road, 19. VII 1938.

Note. As H. Sydow notes in a letter, *Ramularia cochlearia* Cooke f. *barbareae* in Myc. march. 3286 on leaves of *Barbarea stricta* is identical with *R. barbareae* Peck.

**Ramularia bryoniae* Fautr. et Roum.

On the leaves of **Bryonia dioica* L. at Tartu, in the Botanical Gardens of the University, 15. VII 1936.

Ramularia buniadis Vestergren in Bot. Notiser 1903; Lepik (1935) Fungusflora of Ruhnu, p. 17.

On the leaves of *Bunias orientalis* L. at Tartu, on the Raadi estate, 21. VIII 1935 (leg. mag. A. Kivilaan); in the province of Tartumaa, in the churchyard of the Laiuse church, 24. VII 1937 (leg. E. Lepik).

**Ramularia cicutae* Karst.

On the leaves of **Cicuta virosa* L. in the province of Tartumaa, in the Ulila peat-bog, 2. VIII 1936; at Kvistental near Tartu, 10. VII 1936.

**Ramularia cirsii* Allescher.

On the leaves of **Cirsium arvense* var. *horrida* Scop. in the province of Harjumaa, in the parish of Risti, on the beach at Keibu, at Rannaküla, near Nõva on the seashore, 26. VII 1938.

**Ramularia coccinea* (Fuck.) Lindau (1907) in Rabenhorst Krypt. Part 8, p. 495.

On the leaves of *Veronica officinalis* L. at Tartu, in the Vasula forest, 21. VII 1935.

**Ramularia Daniloï* Bubák in Bull. Herb. Boiss. 2^e sér. 6, 1906, p. 486; Rabenhorst Krypt. Part 9, p. 768.

On the leaves of **Lavathera thuringiaca* L. in the province of T a r t u m a a, at Kavilda, along the road on a hill, 19. VII 1936; at T a r t u, near the churchyard on a hillside, 11. X 1936; at T a r t u, in the Raadi park, 24. V 1937; in the province of T a r t u m a a, in the Kursi churchyard, 19. VII 1937.

**Ramularia heraclei* (Oud.) Sacc.

On the leaves of **Heracleum sibiricum* L. in the province of H a r j u m a a, on the Paldiski peninsula, in a wooded hayfield, 21. VII 1938.

**Ramularia lactucae* Jap.

On **Lactuca muralis* Less. in the province of T a r t u m a a, on the Kuremaa estate, in the wood, 24. VII 1937.

**Ramularia leonuri* Sorok.

On the leaves of **Leonurus cardiaca* L. at T a r t u, in the Raadi park, 10. VII 1937.

**Ramularia lychnicola* Cooke in Grevillea 14, 1885, p. 40.

On the leaves of **Melandryum album* Gke. at T a r t u, in the Botanical Gardens, 27. VII 1936.

**Ramularia matronalis* Sacc. Syll. fung. 4, p. 201.

On the leaves of **Hesperis matronalis* L. at T a r t u, in the Botanical Gardens, 19. IX 1934.

**Ramularia melampyrina* Massal. (1900); L i n d a u (1907) in R a b e n h o r s t, Krypt. Part 8, p. 499.

On **Melampyrum nemorosum* L. in the Vasula wood, near T a r t u, 21. VII 1935.

**Ramularia tanacetii* Lind. in Ann. Mycol. 3, 1905, p. 431; G. L i n d a u, Die Pilze Deutschl., Österr. u. d. Schw. VIII, 1937, p. 514.

On the leaves of **Tanacetum vulgare* L. in the province of T a r t u m a a, at Rannu, in the village of Kureküla, on the ridge of a field, 27. VII 1937.

Ramularia taraxaci Karsten (1884); L i n d a u (1907) in R a b e n h o r s t Kryptogam. Part 8, p. 529.

On *Taraxacum officinale* L. at T a r t u, in the Vasula forest, 21. VII 1935.

**Ramularia variabilis* Fuck.

On the leaves of **Digitalis purpurea* L. at Tartu, in the Botanical Gardens, 9. VII, 27. VII 1936.

**Rhizoctonia violacea* Tul. (1851); Lindau (1910) in Rabenhorst Krypt. Part 9, p. 684.

On **Daucus carota* L. in the province of Harjuma a, at Hageri, in the Kohila elementary school, 16. X 1935 (leg. K. Tõnis).

On **Petroselinum sativum* Hoffm. in the province of Harjuma a, at Hageri, in the Kohila elementary school, 16. X 1935 (leg. K. Tõnis).

Scolecotrichum graminis Fuckel (1869); Lindau (1907) in Rabenhorst Krypt. Part 8, p. 794.

On the leaves of **Milium effusum* L. in the province of Tartum a a, at Kastre-Peravalla, Järvselg, 24. VII 1935.

On *Phleum pratense* L. in the same place, 26. VII 1935.

On *Secale cereale* L. in the province of Viljandim a a, at Vana-Tänassilma, 20. VI 1936.

On **Poa compressa* L. in the province of Harjuma a, at Rapla, in the field of the Lipstu Põldmaa farm, 12. VII 1936 (leg. H. Aasama a).

**Septoria anthrisci* Pass. et Brun., Rev. myc. 5, p. 250; Allescher in Rabenhorst Krypt. Part 6, p. 731; Diedicke (1915) in Krypt. Mark Brandenb. Vol. 9, p. 427.

On the leaves of **Anthriscus silvestris* Gmel. at Tartu, in the Ilmatsalu wood, 23. VII 1936.

**Septoria Brissaceana* Sacc. et Let.; Allescher (1901) in Rabenhorst Kryptog. Part 6, p. 811; Diedicke (1915) in Krypt. Mark Brandenb. Vol. 9, p. 484.

On the leaves of cultivated **Lythrum hyssopifolia* L. at Tartu, in the Botanical Gardens, 9. X 1935.

On the leaves of *Lythrum salicaria* (L.) in the province of Tartum a a, at Ulila near the river, in a hayfield, 5. VII 1936.

Note. The spores of this material are a little shorter, 20—32 μ long.

**Septoria dulcamarae* Desm.

On the leaves of **Solanum dulcamara* L. in the province of Viljandim a a, at Vana-Tänassilma, on a farm, on the bank of the river, in a wooded hayfield, 6. VI 1937.

**Septoria erysimi* Niessl.; Allescher (1901) in Rabenhorst Krypt. Part 6, p. 778.

On **Erysimum cheiranthoides* L. at Tartu, in a field at Raadi, not often, 8. VII 1935.

**Septoria eupatorii* Rob. et Desm.

On the leaves of **Eupatorium cannabinum* L. in the province of Harjuma a, at Keila-Joa, on a damp bank of the river, 20. VII 1938.

**Septoria Leucanthemi* Sacc. et Speg.

On the leaves of **Chrysanthemum leucanthemum* (L.) in the province of Valgama a, near Taagepera, on a dry hill-side, seldom, 28. VIII 1937.

**Septoria oenanthis* Picbauer in Addenda ad floram Cechoslovakiae mycologicam VIII, p. 41, Verhandl. d. Naturf.-Vereines in Brünn, 1937.

On the leaves of **Oenanthe aquatica* Lam. in the province of Tartuma a, in the Ulila river, near the Tartu-Viljandi road, 5. VII 1936.

**Septoria oenotherae* Westend., Bull. Ac. roy. Belg. 2^e sér. 12, No. 7; Allescher in Rabenhorst Krypt. Part 6, p. 819.

On the leaves of **Oenothera biennis* (L.) at Tartu, in the Raadi park, 7. VII 1936; at Pärnu, in the churchyard, 2. VII 1937.

**Septoria oreoselina* (Lasch.) Sacc., Sylloge fung. 3, p. 528; Allescher in Rabenhorst Krypt. Part 6, p. 824.

On the leaves of **Peucedanum oreoselinum* Moench. at Tartu, on the Lohkva sand-dunes, very seldom, 2. VII 1936; in the province of Tartuma a, on the Ropka estate, at Soovooru, on the roadside, 19. VII 1936.

Septoria pisi Westend.; Allescher in Rabenhorst Krypt. Part 6, p. 830.

On the leaves of cultivated *Pisum sativum* L. at Tartu, on the Raadi estate, 19. VIII 1935 (leg. mag. A. Kivilaan).

**Septoria podagrariae* Lasch. in Klotzsch, Herb. myc. 458; Saccardo, Syll. fung. 3, p. 529; Allescher in Rabenhorst Krypt. Part 6, p. 724; Diedicke in Krypt. Mark Brandenb. Vol. 9, p. 423.

On the leaves of *Aegopodium podagrariae* L. in the province of T a r t u m a a, at Näki, at Ropka, 3. VIII 1937.

**Septoria scabiosicola* Desm.

On the leaves of **Knaulia arvensis* Coulter at T a r t u, on the Lohkva sand-dunes, 2. VII 1936; in the province of V i l j a n d i m a a, at Vana-Tänassilma, on the Auaku farm, 27. VI 1936; in the province of P e t s e r i m a a, at Puravitsa, in a field, in abundance, 8. VIII 1936.

**Septoria scutellariae* Thüm.; Diedicke (1915) in Krypt. Mark Brandenb. Vol. 9, p. 508.

On the leaves of **Scutellaria galericulata* L. in the province of T a r t u m a a, at Kastre-Peravalla, Järvelg, 26. VII 1935; at T a r t u, in the Botanical Gardens, 14. VIII 1935; in the Kärevere wood, 28. VII 1937.

**Septoria sugomakensis* Trott. in S a c c a r d o, Sylloge fungorum 25, 1931, p. 455 = *Septoria Libanotidis* Naumoff, Champ. oural., I (1915), p. 35, t. IV, f. 37.

On **Libanotis montana* All. near the Vasula village near T a r t u, on a dry sand-hill, not often, 10. VII 1935; in the province of V i r u m a a, near Toila, on a sand-hill, 2. X 1937.

About the same time J. S m a r o d s found this fungus in L a t v i a, Fungi Latv. exsicc. XII, 1935, No. 587.

**Septoria virgaureae* Desm. Ann. Sc. nat. 17, p. 109; Allescher in Rabenhorst Kryptog. Part 6, p. 859; Diedicke (1915) in Krypt. Mark Brandenb. Vol. 9, p. 512.

On the leaves of **Solidago virga aurea* L. at T a r t u, in the Lohkva sand-dunes, 23. VIII 1936; in the province of P e t s e r i m a a, at Toomasmäe, along the Võõpsu-Värska road, 6. VIII 1937; at Uue-Petseri, by the Vilo station in the wood, 9. VIII 1937.

Note. The length of the spores of *Septoria virgaureae* fluctuates. Allescher notes a length of 80 μ , Keissler 50—70 μ , Diedicke up to 60 μ . My material has spores of 58—90 μ in length.

**Titaosporium tremulae* (Lib.) Luyk; S a c c a r d o Syll. fung. 25, Part 10 (1931), p. 579.

On the leaves of **Populus tremula* L. at T a r t u, Mudaniku, 12. IX 1920, often; at T a r t u, in the Ilmatsalu wood, 23. VII 1936.

**Tuberculina persicina* (Ditm.) Lindau (1910) in Rabenhorst Krypt. Part 9, p. 409.

On aecia of **Puccinia ribesii-caricis* Klebahn on the leaves of **Ribes rubrum* L. at Tartu, at Mudaniku, in a damp wood, abundantly, 16. VII 1935.

**Verticillium alboatrum* Reinke et Berth. (1879); Lindau (1907) in Rabenhorst Krypt. Part 8, p. 327.

On the leaves of cultivated **Callistephus* sp. in the Harjuma a province, in the Hara elementary school, 26. VII 1935 (leg. S. Biider).

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