RECORDS AND TAXONOMIC NOTES ON PLANT DISEASE FUNGI IN NEW ZEALAND

By G. F. LAUNDON

Plant Health and Diagnostic Service,
Department of Agriculture, Levin, New Zealand

(With 14 Text-figures)

Two new species are described (Cercospora karaka, Sphaeropsis cordylines), 12 others are recorded in New Zealand for the first time, new host records are given for 18 species, and notes are provided on five other species.

This paper concerns fungi associated with plant diseases which have recently been studied at the Diagnostic Laboratory, Levin. Specimens, dried reference cultures, or living cultures of the species are preserved in Herb. LEV; some are also preserved in Herb. IMI, and when an IMI number is listed for a local specimen, this means that the fungus was identified at Herb. IMI or confirmed as belonging to the species under which it is given herein. If identified at Herb. IMI (but not if only confirmed) then the person responsible is named. A few specimens from Herb. PDD have also been included along with the LEV specimens. Specimens in other herbaria, obtained on loan for study, are designated according to Lanjouw & Stafleu (1964).

Most cultures were grown at 20–25 °C on potato dextrose agar (Anon., 1968) with 0.1% ‘Marmite’ added and they were illuminated by ‘cold white’ and ‘black light’ fluorescent lamps controlled on a 12:12 h light: dark cycle. Suitable cultures were dried and preserved for the herbarium by the cold method (Laundon, 1968).

**Alternaria brassicae** (Berk.) Sacc., *Michelia* 2: 129 and 172 (1880).

Leaf spot of Armoracia rusticana Gaertn., Mey. & Scherb. (horseradish), a new host record for New Zealand. Previously recorded only on Brassica species; the present specimen is severely infected.


**Alternaria dianthi** was first recorded in New Zealand by Brien (1939). **A. dianthicola** was newly recorded as a distinct species by Brien & Dingley
Fig. 1. A, *Alternaria dianthi*, conidia ex LEV 5658a; B, *A. dianthicola*, conidia ex LEV 3827.

(1959). Later, Dingley (1969) treated these two as synonyms. They are, however, quite distinctive both on the host and in culture and are treated as separate species by all other recent authors (Neergaard, 1945; Joly, 1964; Ellis, 1971). *A. dianthi* has comparatively short, broad (30–80 × 10–26 μm) conidia with several longitudinal septa and a darkish colour. *A. dianthicola* has more elongated, narrow (35–110 × 7.5–15 μm) conidia with few or no longitudinal septa and a pale colour. These are illustrated in Fig. 1 and are also well described and illustrated in Ellis (1971). Of the listed specimens, two (5658a and 1595a) occurred on imported plants in post-entry quarantine.


Root rot of *Ribes nigrum* L. (black currant) and *R. uva-crispa* L. var. *sativum* DC. (gooseberry), new host records for New Zealand. Identified by the characteristic rhizomorphs on the host and in culture.

The taxonomy of *Armillariella* spp. occurring in New Zealand is at present under investigation by other workers. For plant pathological purposes they have been grouped under *A. mellea* without investigation as to whether they really belong to this species. Two other New Zealand species
have been described: *A. limonea* Stevenson and *A. novae-zelandiae* Stevenson (1964) and are reviewed by Horak (1971 – see his numbers 172, 185 and 219).


**Botrytis cinerea** Pers. ex Fr., *Syst. mycol.* **3**: 396 (1832).

Die-back of *Chamaecyparis pisifera* (Sieb. & Zucc.) Endl. ‘Cyaneoviridis’, a new host record for New Zealand. Needles and branches of young bushes in a nursery were severely attacked and there can be little doubt as to the pathogenicity of the fungus. Such attacks are well known on numerous other conifers in New Zealand, but hitherto have been recorded on *Chamaecyparis* only in overseas countries.


Bulb rot of *Narcissus* sp. (daffodil), newly recorded in New Zealand. The characteristic black ascocarps on the bulb scales with their long filiform beaks enable easy identification. The ascospores are ellipsoid and very small (1.7–3 × 1.2–1.8 μm) (Fig. 2). The species is described as having a conidial state but this was not seen on the New Zealand specimens.

In LEV 6059 the bulbs were severely infected. The disease appears as brown lesions which often tend to develop on a single isolated internal bulb scale and run up from the root plate or down from the neck forming an elongated lesion with restricted lateral development. Later the rot extends laterally around the scale and radially to adjacent scales. The scales become thin, dry, and studded with ascocarps.

The infection appeared more serious than was found by Limber (1950). In his specimens the fungus did not penetrate beyond the second or third
scale and he obtained only limited rotting in inoculation experiments. As suggested by Limber other organisms probably hasten the decay caused by *C. narcissi*. Such organisms (various fungi, nematodes, mites and larvae) were present in the New Zealand specimens and their presence is probably responsible for the severity of the infection.


**Cercospora karaka** sp. nov.

Maculae usque 30 mm diam, orbiculares, chlorinae, amphigene brunneo- vel atro-brunneo-punctatae, punctis in hypophyllo numerosioribus et atioribus, praesertim in hypophyllo rugulosae, margin ideinde. Mycelium partim immersum, partim superficiale, partibus ab hypha singula hyalina per stoma penetranti connexis. Hyphae immersae intercellulares, hyalinae, laeves, 2–2.5 μm latae. Hyphae superficiales hypophyllae, repentes, septatae, ramoseae, laeves, pallidissime olivaceae, 2–2.5 μm latae. *Conidiophora* supra stomata laxe fasciculata vel ex hyphis superficialibus lateraliter et singulariter oriunda, simplicia, erecta, laevia, sympodialia et subgeniculata, pallidissime olivacea, continua vel a septata, usque circa 25 μm longa, 2–4 μm lata. Cicatrices conidiales non incrassatae, vix perspicuae. Conidia flagelliformia, apicem versus gradatim et leniter attenuata, basi truncata, hilo non incrassato, apice acuta vel obtusa, plerumque curvata vel flexuosa, pallidissime olivacea, laevia, obscure 5–8 septata, non constricta, 60–110 x 2–2.5 μm.


Spots up to 30 mm diam, orbicular, yellow-green, speckled brown or dark brown on both surfaces, with the speckles on the under surface more numerous and darker, rugulose especially on the under surface, with indefinite margin. Mycelium partly immersed, partly superficial with the parts linked through the stomata in each case by a single hyaline hypha penetrating a stoma. Immerged hyphae intercellular, hyaline, smooth, 2–2.5 μm wide. Superficial hyphae hypophyllous, recumbent, septate, branched, smooth, very pale olivaceous, 2–2.5 μm wide. *Conidiophores* loosely fasciculate above the stomata or arising laterally and singly from the superficial hyphae, simple, erect, smooth, sympodial and subgeniculate, very pale olivaceous, continuous or 1-septate, up to about 25 μm long, 2–4 μm wide. Conidial scars unthickened, hardly visible. Conidia flagelliform, gradually and slightly attenuated towards the apex, truncate at the base, with an unthickened hilum, acute or obtuse at the apex, mostly curved or flexuous, very pale olivaceous, smooth, obscurely 5–8 septate, not constricted, 60–110 x 2–2.5 μm (Fig. 3).

In culture the colonies attain about 5 mm diam in 1 week and 20 mm in 3 weeks, they are hemispheric at first then bullate in the centre and flat and even outwards, circular, compact, velvety, medium to dark grey, not zoned, with reverse olivaceous black. Sporulation is poor even when illuminated but some spores reach 160 x 4 μm and tend to be thicker and more blunt at the apex than on the host.

Seen only on seedling plants. There can be no doubt that the fungus is pathogenic owing to the presence of characteristic symptoms, an internal mycelium, conidiphores borne on hyphae passing through the stomata, isolation of sporulating colonies from surface sterilized lesions, and the apparent absence of any other organisms.
New Zealand fungi. G. F. Laundon


Fruit rot of *Fragaria* sp. cult. (strawberry), a new host record for New Zealand. This isolate was confirmed by Simmonds's colleague, G. S. Purss, at the Department of Primary Industries, Brisbane (Simmonds is
Transactions British Mycological Society

This species may have been previously included under *Glomerella cingulata* (Stonem.) Spauld. & v. Schrenk.


Rust on *Mahonia aquifolium* (Pursh) Nutt. and *M. lomariifolia* Takeda, newly recorded in New Zealand. These specimens show mostly urediniospores but a few teliospores are present. Sori hypophyllous, scattered, on tiny spots showing dark reddish on the upper surface of the leaf. Urediniospores globose, broadly ellipsoid to fusiform, often with a protuberant hilum, 23–27 × 17–23 μm; wall amber, finely and densely echinulate, 1.5–2.5 μm thick but double layered with paler outer layer conspicuously thickened (to 4 μm) over the pores and sometimes slightly thicker at the apex; pores (3–)4(–5), equatorial. Teliospores ellipsoid, constricted at the septum and with rounded ends, 27–40 × 20–25 μm; wall amber to fulvous, finely verrucose, 2–5 μm thick, multilayered with predominantly a dark

---

![Fig. 4. *Cumminsiella mirabilissima*, urediniospores and teliospores ex LEV 4908.](image-url)
inner layer and a pale outer layer; pores 2, equatorial in both cells or ± apical in the lower cell; pedicels hyaline, persistent, 100–200 μm long with wall thick above, thin below (Fig. 4).

The earliest specimen (1954, PDD 13951) was identified by S. D. Baker; the next one (1970, PDD 28716) by H. J. Boesewinkel. Whilst the earliest outbreak was on plants in post-entry quarantine, the subsequent outbreaks were not. However, all known affected plants have been destroyed in the hope of eradicating the disease.


Corm rot of Gladiolus sp., newly recorded in New Zealand. The protuberant hilum of the conidia, their strongly curved (but not sigmoid) shape, the predominantly 3-septa and the relatively short (less than 40 μm long) length of the conidia are diagnostic of C. trifolii (Fig. 5). The form attacking gladiolus is morphologically identical but biologically distinct from the one attacking clover; neither appears to be capable of cross-infection (Parmelee, 1956; Kilpatrick, 1958). Detailed descriptions are given by Ellis (1966) and Laundon (1971).

In the New Zealand specimen the fungus was isolated from dry, firm, sunken, brown lesions on locally grown corms in storage. The disease can

![Fig. 5. Curvularia trifolii f. sp. gladioli, conidiophore and conidia ex LEV 5284.](image-url)
Transactions British Mycological Society

attack all parts of the plant and is seed and soil-borne as well as carried by infected corms. Control treatments are given in Laundon (1971).


Leaf blotch on Trifolium repens L. (white clover) a new host record for New Zealand. This species is very common on white clover and probably has been for some years. Perhaps it has been accidentally omitted from the published records, although there is a passing mention of its occurrence on white clover in Wong & Latch (1971) who were perhaps unaware that the recording had not previously been published.

There is some disparity concerning the taxonomy and nomenclature of this species. Several authors merge Cymadothea with Mycosphaerella (Petrak, 1941; Dennis, 1960; Müller & Arx, 1962) in which case the species has to be called M. killianii (not ‘killiani’) owing to the earlier name, M. trifolii (Karsten) Moesz referring to a different species. However, Ellis (1971) retains Cymadothea.

Dingley (1969) gives the author citation for this species as ‘(Pers.) Wolf’ but Killian was the first author to describe mature asci and ascospores (Wolf, 1935) so that the name Plowrightia trifolii, which Killian used, becomes the basionym and must be attributed to Killian alone (Stafleu, 1972, Art. 59).


Powdery mildew on Plantago major L. (great plantain), newly recorded in New Zealand. The powdery mildew on Plantago has generally been referred to as E. lamprocarpa (Wallr.) Duby, but the error of this is pointed out by Junell (1965), who discusses other nomenclatural aspects of this species and gives the name E. sordida.

The ascocarps are described as possessing 6–20 asci, each with two ascospores (rarely 3 or 4) measuring 20–25 × 11–15 μm. No ascocarps are present on the New Zealand specimens and since the conidia apparently have no diagnostic features, the local specimens are tentatively placed in E. sordida on a host basis. It is interesting to note that plants of P. lanceolata L., alongside and touching severely mildewed plants of P. major at the Levin site, were unaffected.


Gibberella zeae (Schw.) Petch, Annls mycol. 34: 260 (1936).

Inflorescence rot of Sorghum vulgare Pers., a new host record for New Zealand. Overseas this disease of sorghum inflorescences is well known under wet conditions (Tarr, 1962).
New Zealand fungi. G. F. Laundon


Clove rot of Allium sativum L. (garlic), newly recorded in New Zealand. The characteristic lustrous carbonaceous sclerotia 50–160 μm diam, profusely and evenly formed in agar culture (and on the host) and the absence of aerial mycelium enable this species to be readily identified. Apparently some strains form spores readily whilst others remain non-sporing. The local isolates were all non-sporing and prolonged attempts to obtain sporulation in LEV 5169 were unsuccessful. A full description is given by Holliday & Punithalingam (1970).

The fungus is not generally regarded as a strong pathogen and had attacked chiefly only the outer scales of the garlic clover clusters. In LEV 6133 it had attacked the interior of some cloves but possibly this was following damage or another organism. Attempts to cause a clove decay by inoculation were unsuccessful, but runner bean plants growing from seed germinated in a mixture of sterile sand and sclerotia bore lesions on stems, cotyledons and leaves (controls germinated in sterile sand remained healthy) and the fungus was re-isolated from the affected tissues after they had been surface sterilized.


Marssonina betulae (Lib.) Magn., Hedwigia 45: 88 (1906).

Leaf spot on Betula pendula Roth (silver birch), newly recorded in New Zealand. The one-septate (rarely 2- or 3-septate) cylindric-clavate or ellipsoid conidia (Fig. 6) measuring 13–22 x 4–8 μm readily distinguish this species from the two other leaf spot fungi recorded in New Zealand: Cylindrosporium betulae Davis with conidia 25–40 x 1.5–2 μm, and Ceuthospora betulae (Fuckel) Arx (syn. Gloeosporium betulae Fuckel) with conidia 10–15 x 1.5–2 μm. The leaf blotches are indefinite and bear acervuli on both sides of the leaf.

Several publications (e.g. Saccardo, 1892; Smith & Ramsbottom, 1913; Grove, 1937) quote the conidia as slightly broader (8–10 μm) than given here but they are very variable. Grove mentions that he found the conidia to be much narrower (5–6 μm). Another difference is that the acervuli have been variously described as epiphyllous or hypophyllous.


Microstroma album (Desm.) Sacc., Michelia 1: 273 (1878).

Leaf spot (‘frosty mildew’) on Quercus robur L. (oak) newly recorded in New Zealand. Forms small angular leaf spots, yellowish in colour and varying from obscure to very conspicuous on the upper surface of the leaves. The fungus sporulates only on the lower surface and appears as a
pure white powdery growth somewhat resembling powdery mildew; sometimes densely covering the entire under-surface, other times sparse and local. The fungus forms very characteristic synnemata-like cylindrical columns bearing conidia in rings at short intervals. The conidia are ellipsoid-fusoid, single-celled, hyaline, 4–10 × 1.5–4 μm (Fig. 7).

The disease appears to be common in Levin; other areas have not been searched. The taxonomy of this species appears to be somewhat uncertain but see Charles (1935) and Arx (1970). In the U.S.A. a fungus which is probably this species but referred to by the name Articularia quercina var. minor Charles has been reported (Hawksworth & Mielke, 1962), as consistently associated with (and therefore probably causing) a witches' broom of Quercus gambelii. There is as yet little indication of an association of this fungus with deformed growth of oaks in New Zealand.


**PERONOSPORA JAAPIANA Magn., Ber. dt. bot. Ges. 28: 250–253 (1910).**

Downy mildew of *Rheum rhaponticum* L. (rhubarb) newly recorded in New Zealand. This species forms large angular lesions delimited by the veins. At first the affected tissues remain live but gradually dry out becom-
ing yellow-brown and necrotic. In the present specimen sporulation is not very profuse. The sporangia (Fig. 8) sized 23–33 × 15–20 μm agree with those described for *P. jaapiana* (at 23–34 × 16·5–18 μm).

This species has been found on only one property and although others in the district were searched without finding the disease it was felt that it could be more widespread but of minor importance. There had been no known recent introductions of rhubarb suggesting that the disease may have been present for some years.


**Phoma exigua** Desm., *Annls Sci. nat. (Bot.)*, III, **11**: 282–283 (1849).

Leaf spot and fruit lesions of *Cyphomandra betacea* Sendtn. (tamarillo), previously recorded as *Ascochyta cyphomandrae* Petch (Brien & Dingley, 1951; Dingley, 1969). Specimens, all typical of *A. cyphomandrae*, gave isolates typical of *P. exigua*. Numbers 4170 and 4243 submitted to Dr G. H. Boerema (Wageningen) were confirmed as the latter species. The type specimen of *A. cyphomandrae* Petch obtained on loan from Herb. K (5165, Hakgala, April 1917) agreed exactly with the New Zealand material. Therefore this name falls into synonymy under *P. exigua*.


Root rot and basal rot of *Myoporum parvifolium* R. Br., a new host record for New Zealand. The affected tissues bore copious ooospores and this *Phytophthora* was consistently isolated.

*Specimen examined.* LEV 6180, IMI 164944 (identified by D. J. Stamps), Wellington (Province): Wellington (City), R. Parker, 13. iii. 1972.

Root rot of *Medicago arborea* L. (tree medick), a new host record for New Zealand.


Puccinia arenariae (Schum.) Wint., *Hedwigia* 19: 35 (1880).

The New Zealand recording of this species is based on a single specimen collected in 1874 (Jørgstad, 1957). As far as I am aware no other specimens are known but recently the rust has been found again on the same host as before, *Stellaria parviflora* Banks & Sol. ex. Hook. f.


Rust on *Alopecurus arundinaceus* Poir, a new host record for New Zealand. Only uredinia present.


Rust on *Festuca burnatii* St-Yves, a new host record for New Zealand. Only uredinia present.


Rust on *F. caerulescens* Desf., a new host record for New Zealand. Uredinia and a few telia are present.


Rust on *Agropyron magellanicum* Hackel ex P. Dusen, a new host record for New Zealand. Uredinia and a few telia are present.


Rust on *A. remotiflorum* L. Parodi, a new host record for New Zealand. Uredinia and a few telia are present.


Rust on *Elymus patagonicus* Speg., a new host record for New Zealand. Uredinia and a few telia are present.


Rust on *Helianthus annuus* L. (sunflower), newly recorded in New Zealand. This specimen was identified by Miss J. M. Dingley (PDD).
Only urediniospores are present on this specimen but they are characteristic of *P. helianthi* in being globose to ellipsoid, 22–30 × 18–23 μm; wall cinnamon, finely echinulate, 1.5–2 μm thick and with two equatorial pores (Fig. 9). For a full description see Laundon & Waterston (1965).

The infection was found on volunteer seedlings following a crop which was believed to be healthy. In turn this crop was grown from locally grown seed from crops which were believed to be healthy. No other infected plants could be found in the area and it was thought that the infection might have arisen from wind-blown spores from Australia. The affected plants were promptly destroyed by burning in the hope of eradicating the rust.


**Puccinia iridis** Rabenh., *Krypt.-Fl.* 1: 23 (1844).

Rust on *Crocus*, a new host record for New Zealand. This appears to be the first recording on *Crocus* anywhere in the world. The plants were growing in post-entry quarantine having originated from bulbs collected in Turkey and grown for a period in the United Kingdom. The infection may well have arisen from a local source; however, the affected plants were destroyed. The identity of the *Crocus* species involved is not known.


Rust on *Elymus antarcticus* Hook. f., a new host record for New Zealand. Only uredinia are present and this specimen can only tentatively be placed in *P. recondita*.


Stem rot of *Chrysanthemum morifolium* Ramat (florists' chrysanthemum), a new host record for New Zealand. This specimen was from a post-entry quarantine area but the infection was probably of local origin as the plants were introduced as unrooted tip cuttings and appeared quite healthy on arrival.

Basal rot of *Gladiolus*, a new host record for New Zealand. This appears to be the first recording on *Gladiolus* anywhere in the world; indeed *S. minor* has rarely been reported on monocotyledons and only one such recording (on asparagus; Wasewitz, 1938) has been traced. This raises the question as to whether the present material is *S. minor* or another species. Certainly isolates of 6234 appear identical with those of *S. minor* when grown together. The chief diagnostic features are as follows: (1) absence of conidial state; (2) floccose or snowflake-like appearance of cultures immediately prior to sclerotal formation; (3) rapid production of sclerotia (7 days); (4) small size of sclerotia (0.5–2 mm); (5) sclerotia readily separating, both from the host and from the culture substrate; (6) absence of mycelial pads (haptera) around the edge of a Petri dish culture. These features rule out the obvious alternatives such as *Botrytis cinerea* Pers., *S. bulborum* (Wakker) Rehm, *S. draytonii* Buddin & Wakefield (including *B. gladiolorum* Timm.), *S. gladioli* Drayton, *S. sclerotiorum* (Lib.) de Bary and *Sclerotium tuliparum* Kleb., all of which, except *Sclerotinia sclerotiorum*, have been recorded on *Gladiolus*. Numerous species recorded on related bulbous hosts are also ruled out. There is one possible alternative and this is *Sclerotinia sativa* Drayton & Groves (1943), which was described on *Tulipa*, *Narcissus* and some legumes. However, this is a rather dubious species which may even turn out to be a synonym of *S. minor*.


Stem rot of *Lupinus angustifolium* L. (blue lupin), a new host record for New Zealand.


Clove rot of *Allium sativum* L. (garlic), newly recorded in New Zealand. The large cerebriform sclerotia are diagnostic of this species and are present in isolates from all the specimens examined. However, occasionally a colony will fail to form any sclerotia or the sclerotia may fail to become cerebriform (usually they take 3 or 4 weeks to develop and become cerebriform). Because of this variation several isolations should be made from a suspected specimen. The conidial state is illustrated (Fig. 10).

This pathogen is apparently common in the garlic-growing areas of Blenheim and Nelson. It has been present since 1965 and perhaps long before this. The disease can be important both in the field and in store. The specimen from Auckland was in a consignment for export and may have originated in the Blenheim or Nelson area.

New Zealand fungi. G. F. Laundon


Stem rot of *Capsicum frutescens* L. (pepper), a new host record for New Zealand.


Stem rot of *Carthamus tinctorius* L. (safflower), a new host record for New Zealand.

*Specimen examined.* LEV 4907, Wellington: Kairanga, J. C. Muirhead, 6. i. 1971.


This fungus was recorded on New Zealand grapefruit (*Citrus* sp.) by Brien (1939) but according to Dingley (1969) no specimens were preserved and the fungus has not been collected again. A specimen in the Levin herbarium confirms the presence of this fungus in New Zealand. Checks on the identity of this specimen and some quarantine interceptions led to work on the taxonomy and nomenclature of *Septoria* on *Citrus*.

The specimen was compared with three collections of *S. citri* from overseas. These were the type specimen (Thümen, *Myc. univ.* 495 from Herb. PAV, and K) and two authentic specimens (Rabenh., *Fungi eur.* 2257 (isotype?) from Herb. PAV, K, and PAD; *Erb. Critt. Ital.* Ser. ii 990 from Herb. PARMA). Although these three specimens are all on dead leaves, the fungus characters: broadly opening, often elevated pycnidia, with conidia mostly 7-23 × 1-2 μm and 0-1 septate, are identical with those of the local specimen (Fig. 11).

Authentic material of *S. limonum* Pass. and *S. citricola* Rugg. could not be obtained and only one other specimen of *S. limonum* was obtained despite requests to several herbaria. This specimen (Saccardo, *Myc. ital.* 1545, from PAV and PAD) bore only a few pycnidia and these mostly appeared damaged (perhaps by insects) with no conidia except for a few...
pycnidia in the PAD specimen with conidia 4–7 × 1.5–2 μm which do not agree with the description of *S. limonum* and therefore are irrelevant. Both of these species are said to have non-septate conidia but in view of the extreme obscurity of the septa this could easily be an error. Further, although the published descriptions of *S. limonum* and *S. citricola* do not overlap in conidial length they are both within the range of *S. citri* in which it has been found that different pycnidia, even on a single leaf, can show substantial differences in conidial length. This sort of variation could easily account for the different lengths given for *S. limonum* and *S. citricola*.

In Australia, *Septoria* on *Citrus* has been referred to *S. depressa* McAlp. (N.S.W. Dep. Agric., 1963). It can cause heavy losses and must be quite common judging from several interceptions which have been made on imported fruit. Although some supposedly authentic material (from Burnley and DAR) has been examined nothing corresponding to the description of *S. depressa* could be found on it. However, the intercepted material and eight specimens from Herb. DAR labelled *S. depressa* are identical with *S. citri*.

The citation for *S. citri* given at the head of this section is different from that usually given (*Flora*: 13, 1877) because the label to Thümen's *Myc. univ.* 495 (1876), marked 'Septoria citri Pass. nov. spec.' includes a Latin description and constitutes the first valid publication of the name. The citations to the other names discussed here are as follows: *S. limonum* Pass., *Atti Soc. crittog. Ital.* 2: 23 (1879); *S. depressa* McAlp., *Fung. Dis. Citrus Austral.* 83 (1899); *S. citricola* Rugg., *Boll. Staz. Pat. veg. Roma*, N.S. 15: 313–322 (1935).


*Septoria silenes-nutantis* C. Massal. ex Sacc., *Annls mycol.* 9: 252 (1911).

Leaf spot on *Silene gallica* L., newly recorded in New Zealand. This specimen shows large (up to 5 mm diam) pale necrotic lesions, sometimes with a purplish halo. The pycnidia are mostly epiphyllous and up to 150 μm diam. Conidia are 45–68 × 1.6–2.5 μm with 1–3 septa (Fig. 12). These features agree closely with those described for *S. silenes-nutantis* except that this species is described as having rather small pycnidia and non-septate spores. However, pycnidial size is of doubtful value and the septa are so obscure in the local specimen that they could easily be overlooked. Despite this reasonably close agreement with *S. silenes-nutantis*, no named material has been compared and the identification should be regarded as tentative.
A large number of *Septoria* species has been recorded on Caryophyllaceae, indeed even on *Silene*, and until a lot more work has been done on these, it would appear that a definite identification is impossible. Such work could not be based on herbarium material alone.


*Sphaeropsis cordylines* sp. nov.

*Maculae* elongatae, incr crescentes et confluentes, necroticae, atrobrunneae centro griseo-brunneo, margine definito. *Pycnidia* amphigena, discreta, disseminata, primo immersa, erumpescentia, atra, simplicia, subglobosa vel planata, 0.2–0.4 mm diam, ostiolo papillato: paries pseudoparenchymaticus, multistratatus. *Conidiophora* (phia·lides?) hyalina, cylindrica, simplicia, continua, usque 20 × 6 μm. *Conidia* in forma et magnitudine paulo variabilia, globosa vel ellipsoidea, interdum angulata, continua, 15–28 × 10–18 μm: paries primo aureus demum fuscus, duplex, pars interior 1–1.5 μm crassa et atrior quam pars exterior, pars exterior 0.5–1 μm crassa et subtiliter echinulato-reticulata.


The large globose ornamented spores, rather like smut spores, make this species very distinctive. The exact nature of the ornamentation is difficult to determine, in surface view it appears echinulate but in optical section fine connecting ridges appear to be present. The pathogenicity of the species is not known but the appearance of the specimens suggests at least weak pathogenic capability.

The PDD specimen is marked ‘*Sphaeropsis cordylinidis* G. H. Cunn.’ and ‘Type colln.’ but apparently Cunningham never published the name.

STEREUM PURPUREM (Fr.) Fr., *Epicr. Syst. mycol.* 548 (1838).

Silver leaf of *Lonicera tatarica* L., a new host record for New Zealand. This plant showed typical silver leaf symptoms and *S. purpureum* was isolated.


Silver leaf of *Protea* sp., a new host record for New Zealand. Immediately following the death of this tree, a crop of *S. purpureum* fruiting bodies appeared.


Graft failure of *Actinidia chinensis* Planch. (chinese gooseberry), a new host record for New Zealand and rooting failure of cuttings of *Rhododendron* sp., new host records for New Zealand.

In both of these cases this fungus was consistently associated with the condition and though there was no proof that it was responsible, its pathogenicity is well established (Subramanian, 1968).


Rust on *Pisum sativum* L. var. *sativum* (garden pea), a new host record for New Zealand. Uredinial aecia and telia are present on these specimens. This appears to be the first recording of this characteristic demicyclic species on *Pisum* anywhere in the world. The rust is common on *Trifolium dubium* Sibth. in New Zealand (Laundon, 1970) and it is presumed that cross-infection on to *Pisum* has taken place. Technical difficulties over a period of 3 years have hindered attempts at artificial cross-infection; even attempts to infect *T. dubium* with spores from the same host have been unsuccessful.


Rust on *Trifolium micranthum* Viv. (*T. filiforme* L.) (lesser suckling clover), a new host record for New Zealand. Uredinial aecia and telia are present.
Possibly this is the first recording on *T. micranthum* anywhere in the world. The plants were interspersed amongst infected plants of *T. dubium*.


**Ustilago agropyri** McAlp., *Agric. Gaz. N.S.W.* 154 (1896).

Smut on *Notodanthonia caespitosa* (Gaudich) Zotov and *N. clavata* Zotov. New host records for New Zealand. The only other smut recorded on *Notodanthonia* in New Zealand has smaller spores (*U. agropyri*, spores 7–18 μm; *U. comburens* Ludw., spores 4–5 μm).


**Ustilago spegazzinii** Hirschh., *Notas Museo La Plata (Bot.).* 4: 415–419 (1939).

Smut on *Stipa variabilis* Hughes, newly recorded in New Zealand. This specimen, identified by R. E. Falloon working at Lincoln (N.Z.), is a stem smut with naked sori surrounding the internodes and with spores mostly globose to broadly ovoid, 3.5–6 μm diam.; with wall pale yellowish brown, smooth, but with ± bipolar echinulations, and c. 0.5 μm thick (Fig. 14). Infected plants lack an inflorescence.


---

Fig. 14. *Ustilago spegazzinii*, spores ex LEV 5103.

I am very grateful to the staff of the Commonwealth Mycological Institute (Kew) and to others mentioned in the text for assistance with identifications and confirmations of identifications. Also I thank the curators of various herbaria mentioned in the text who have kindly lent specimens in their care, Mr F. C. Deighton (C.M.I.) for improvements to my description of *Cercospora karaka* and for the Latin, and Dr R. W. G. Dennis, Royal Botanic Gardens (Kew) for advice concerning *Septoria citri*. Finally, I thank Miss J. M. Dingley (PDD, Auckland), Mr H. J. Boeswinkel (P.D.S., Auckland) and my colleagues at Levin for allowing me to include various records first found, examined, or isolated by them, and Dr J. E. Sheridan (Victoria University, Wellington) for helpful criticism of the manuscript.
REFERENCES
New Zealand fungi. G. F. Launson


(Accepted for publication 4 October 1972)