

Concerning some South African *Pestalotiopsis* Steyaert.

(*Pestalotia* Auct. non de Not.)

By

R. L. Steyaert.

(*Institut National pour l'Etude Agronomique du Congo Belge.*)

In an attempt to study type specimens of *Pestalotiopsis* Steyaert (*Pestalotia* Auct. non de Not.), I have been privileged to borrow type material of some South African species. Unfortunately some of this type material, of which only fragments were available to my study, was insufficient; it was either too poor in conidia or bore none or only broken ones.

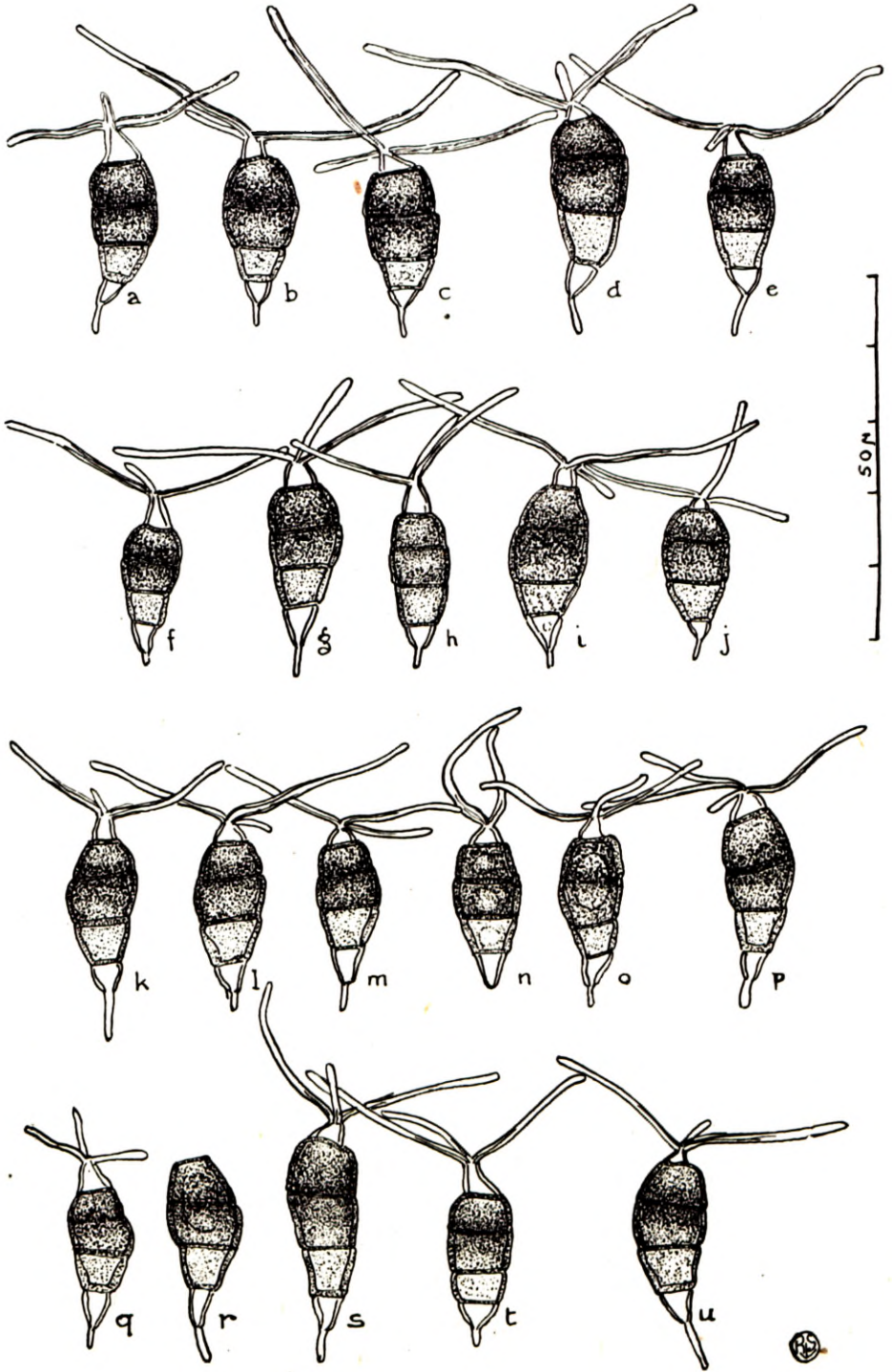
However, I have been able to gather sufficient data to substantiate some fundamental modifications in the list of South African species.

As the study of this batch of material progressed it soon became apparent to me that one and the same species had been considered different according to the host on which it occurred.

It is common knowledge that mycologists, specially those dealing with phytocolous species, have always been impressed by the "Host-species" relationship. With this host specificity in mind many species unrecorded on a host have been considered as new. Considering the enormous difficulties involved in the determination of species for such extensive genera as *Pestalotiopsis* it is a point of view that has been profitable for practical purposes, mainly because specimens have been described and published and are now on record and available. It is my opinion that authors should not be extensively criticised on that account. In the absence of a thorough and well-made revision it is a situation that is inevitable, but as the systematics of Mycology progresses it is to be remedied. The species concept with saprophytic or semi-saprophytic fungi such as *Pestalotiopsis* should be based on a much broader view. One is led to this conclusion when a great number of specimens can be examined. Dimensions may be misleading and I do not uphold that I have never been misled myself. Morphological characters are of course the main discriminating factors and on this basis it is apparent that within the South African species many synonyms have been published. The ones that were offered to my study are a typical example of this contention.

The following species were published or redescribed in *Bothalia* 4: 821-831: 1948 by E. M. Laughton: *Pestalotia burchelliae* Laughton, *P. caffra* Sydow, *P. laughtoniae* Doidge, *P. encephalartos* Laughton, *P. milletiae* Laughton, *P. pelargonii* Laughton, *P. podocarpi* Laughton non Dennis, *P. rapanae* Laughton non Viégas.

The conidia of all these species are claviform, with the two upper, coloured cells a deep, opaque, fuliginous brown and with an opaqueness more pronounced round the septum separating the cells. The setulas are relatively thick, usually with a clearly visible if not wide lumen. The dimensions of the conidia have a range that is given in Table 1, in which my measurements are compared with those of E. M. Laughton. Mine are the result of the standard technique I have used throughout my studies on this genus. About twenty conidia are drawn for each specimen with a camera lucida and with the same optical equipment. All drawings are thus immediately comparable and measurable with the same scale in all their details. In Figure 1 are given sample drawings of approximately the biggest and the smallest conidia of each specimen of the above-mentioned species.



If for some specimens there are some plus or minus variations the distinction cannot be, in my opinion, above the varietal level. Even so, I think the variations are due more to the host difference than to varietal distinctions.

If these measurements are compared with those I have given for *Pestalotiopsis glandicola* (Cast.) Steyaert in Bull. Jard. Bot. Etat, Brux. 19: 352-353: 1949, it will be seen that there is a very definite identity. Also, the same morphological characters as described above can be observed with this species.

The following synonymy is therefore justified:—

Pestalotiopsis glandicola (Cast.) Steyaert in Bull. Jard. Bot. Etat Brux. 19: 330-334, 352-353: 1949.

Pestalotia caffra Sydow in Ann. Mycol. 12: 266: 1914, fide isotype in Nat. Herb. S. Afr. Pretoria, *E. M. Doidge* 6630, Isipingo, Natal, Nov. 1913.

P. burchelliae Laughton in Bothalia 4: 821: 1948, fide *F. S. Laughton* 34912 hclotype in Herb. loc. cit.

P. laughtonae Doidge in loc. cit., p. 824, fide *E. M. Laughton* 35145 holotype, 35146, 34916 in Herb. loc. cit.

P. encephalartos Laughton in loc. cit., p. 823, fide *Malvern* 861, in Herb. loc. cit.

P. millettiae Laughton in loc. cit., p. 825, fide *E. M. Laughton* 33437 holotype in Herb. loc. cit.

P. pelargonii Laughton in loc. cit., p. 827, fide *E. M. Laughton* 34918 holotype in Herb. loc. cit.

P. podocarpi Laughton non Dennis in loc. cit., p. 827, fide *E. M. Laughton* 34917 holotype in Herb. loc. cit.

P. rapanae Laughton non Viégas in loc. cit., p. 829, fide *E. M. Doidge* 17171 holotype in Herb. loc. cit.

Unfortunately I have been able to retrieve only fragments of conidia, usually the coloured cells only, from the fragments of the types of *P. laurophylli* and *P. ocoteae*, but what I have observed on these suggests strongly that they also might be considered as synonyms.

On the specimen *Doidge* 17169, I have been able to observe the beautiful conidia of *Pestalotia trichocladi* Laughton for which I make the new combination:—

Pestalotiopsis trichocladi (Laughton) Steyaert comb. nov.

Pestalotia trichocladi Laughton in Bothalia 4: 829: 1948, fide *Doidge* 17169 holotype in Nat. Herb. S. Afr., Pretoria.

This species has conidia of remarkable size (see Table 1) specially in regard to the setulas. Laughton did not record that they are spatulate. My observations show that they are definitely so, with a wide lumen nearly the whole length. The coloured cells are concolorous. This feature places the species very close to *P. planimi* (Vize)

FIG. 1.—Conidia of *Pestalotiopsis glandicola* (Cast.) Steyaert, from type specimens of: a-b, *Pestalotia burchelliae* Laughton (*F. S. Laughton*, 34912); c-d, *P. caffra* Sydow (*Doidge*, 6630); e-f, *P. encephalartos* Laughton (*Malvern*, 861); g-h, *P. laughtonae* Doidge (*E. M. Laughton*, 35145), i-j (*Laughton*, 34916), k-l, (*E. M. Laughton*, 35416); m-n, *P. millettiae* Laughton (*E. M. Laughton*, 33437); o-p, *P. pelargonii* Laughton (*E. M. Laughton*, 34918); q-r, *P. podocarpi* Laughton non Dennis (*E. M. Laughton*, 34917); s-u, *P. rapanae* Laughton non Viégas (*Doidge*, 17171).

Steyaert, which has much smaller setulas and bigger conidia. The drawings of three conidia of *P. trichocladi* are given in Fig. 2.

Several other specimens (*P. pterocelastri* Laughton in loc. cit., p. 828; *P. cassinis* Laughton in loc. cit., p. 822; *P. watsoniae* Verw. et Dipp. in S. Afr. Journ. Sci. 27: 327: 1930) gave such scanty or incomplete material that no opinion can be offered as to the validity of these species. Regarding the type specimen of *P. cassinis*, there were individual acervuli in which the conidia had coloured cells ranging from concolorous, and with sizes as given by E. M. Laughton for *P. cassinis*, to the versicoloured type of conidium of *P. glandicola*. It may be that immature stages of *P. glandicola* have been mistaken for a new species.

With regard to *P. pterocelastri*, unfortunately no conidia were retrievable from the part of the specimen sent, but judging by Laughton's measurements this species is very close to, if not identical with, *P. ilicis* (West.) Steyaert.

The specimen of *P. watsoniae* gave abundant conidia but these were incomplete and lacked setular ornaments. There is no doubt that this species belongs to the genus *Truncatella* Steyaert, but in the absence of setulas I cannot decide on the validity of the species. Authors have so often described as plurisetulate, species which in reality possess a single but ramified setula, that I cannot decide without having personally seen the arrangement of the setae. As far as the coloured cells are concerned, *P. watsoniae* is no different from *Truncatella ramulosa* (V. Beyma) Steyaert or from *T. conorum-piceae* (Tubef) Steyaert.

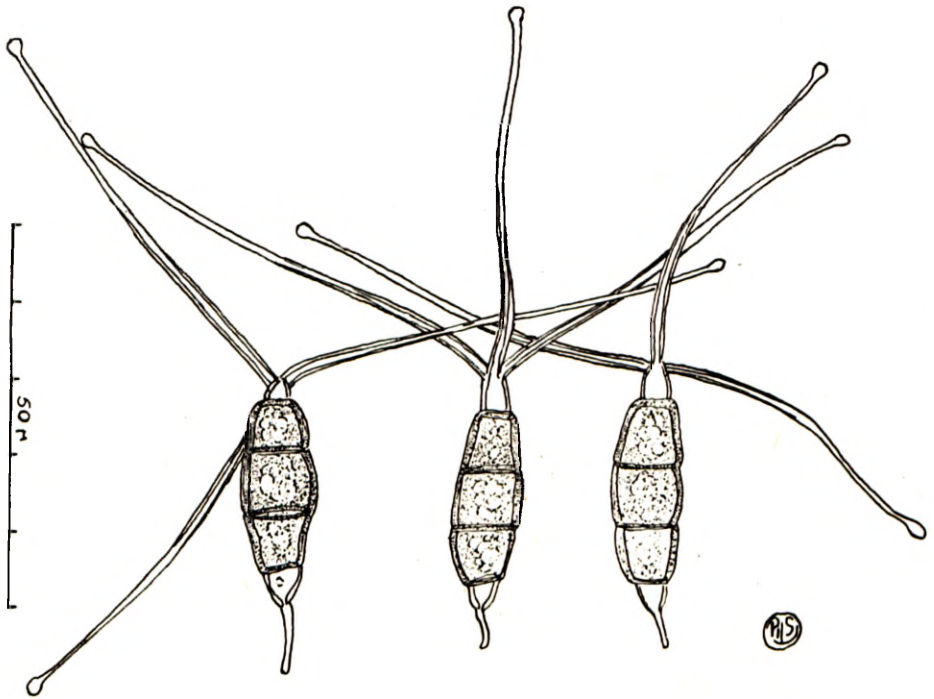


FIG. 2.—Conidia of *Pestalotiopsis trichocladi* (Laughton) Steyaert, X 1000. From type specimen of *Pestalotia trichocladi* Laughton (Doidge, 17169).

TABLE 1.
MEASUREMENTS IN MICRONS OF THE CONIDIA AND THEIR PARTS.

Species and Number of Specimen.	STEYAERT.						LAUGHTON.					
	Conidium.		Colored Cells, Length.	Setulas.		Pedicel.	Conidium.		Colored Cells Length.	Setulas.		Pedicel.
	Length.	Width.		Number.	Length.		Length.	Width.		Number.	Length.	
<i>P. glandicola</i> (Cast.) Steyaert.....	—	—	—	—	—	—	—	—	—	—	—	—
<i>P. burchelliae</i>	23-25-29	9-10.5-12	16-16.9-18	2-3	15-20.8-30	2-3.4-6	22-25	7.5-8	15-17.5	3-4	20-30	5-7
<i>P. caffra</i>	22-24.5-27	9-10.6-12	16-17.7-20	2-3	20-27.9-34	(1)3.4.5-7	22-28	8-11	16-19	3	20-26	2-7
<i>P. encephalartos</i>	20-21.8-23	8-9.4-11	14-14.7-16	2-3	14-20.1-26	2.4.7-7	18-25	6-9	12.5-17	2-3	17-25	6-7
<i>P. laughtonae</i> nr. 35145.....	23-24.7-26	9-10-11	15-16.7-18	3	14-21.5-30	2-2.9-5	22.5-25	9-11	15-17.5	2-3	20-25	4-6
nr. 35146.....	21-24.7-27	9-10	16-17-18	2-3	15-21.8-28	3-4	—	—	—	—	—	—
nr. 34196.....	20-24.1-27	(7)9-10.1-12	15-17.4-19	3	13-18.6-26	3-4	—	—	—	—	—	—
<i>P. milletiae</i>	19-21.2-25	8-9.2-10	13-15-20	3	10-15.8-21	2-3.1-4	19-22	7-8	14-17.5	2-3	10-15	4-5
<i>P. pelargonii</i>	21-23.9-27	9-9.5-12	15-16.9-19	2-3.4	12-18.4-26	2.4-6	20-25	7.5-9.5	14-17.5	2-3.4	15-25	5-7
<i>P. podocarpi</i>	22-23.2-25	9-10.2-12	14-16-18	—	—	—	20-23(25)	7.5-10	15(16)	3-4	20-30	3.5-7
<i>P. rapanae</i>	24-27.4-30	9-10.2-12	15-19.2-22	2-3	15-23.5-35	1-2.9-7	22-27.5	9-10	15-19	2-3	15-26.5	4-5
<i>P. laurophyli</i>	—	8-9	15-16-18	—	—	—	20-25	7.5-9(10)	14-17.5	2-3	17.5-25	2-10
<i>P. ocoteae</i>	—	7-8.5-10	16-18-21	—	—	—	22.5-27.5	6-7.5	15-18	2-3	15-25	5-7
<i>P. trichocladi</i>	28-31.4-34	8-9.6-11	20-22.4-24	2-3	43-52-70	3-6-10	30-37.5	7.5-9	20-25	2-3.4	45-60	6-12
<i>P. pterocelastri</i>	—	—	—	—	—	—	(25) 30-34 (37.5)	9-10	20-25	3	20-44	5-10
<i>P. watsoniae</i>	—	7-8-9	12-13.5-15	—	—	—	17-22.5	7.5-9	12.5-16	4-5	15-30	30

