PERSOONIA
Published by the Rijksherbarium, Leiden
Volume 5, Part 3, pp. 233–236 (1969)

CLUES FOR THE DETERMINATION OF THE SPORE-SIZES IN BOURDIER'S ILLUSTRATED PUBLICATIONS

J. VAN BRUMMELEN
Rijksherbarium, Leiden

A scale communicated in a letter written by Boudier makes possible the establishment of the spore-sizes in his earlier publications; it is here reproduced. Similarly, but with a different scale, the sizes of the spores in Boudier's publications from 1885 onwards can be revaluated. His microscopic measurements have been found to be usually about 10 % too high.

The correct interpretation of Boudier's descriptions of fungi in his earlier publications is often hampered by his omission of the sizes of the microscopic details. This is especially true of his "Mémoire sur les Ascobolés" (Boudier, *1869*) in which many species of Ascobolaceae were described and illustrated. Even a cursory study of the fine plates accompanying this *mémoire* reveals that the microscopical drawings do not agree with the relevant enlargements.

Contrary to most of the others, the spore-drawings in Boudier's early publications were usually drawn to the same scale of enlargement, which was stated to be 340 times. This, however, is far too low.

In the British Museum (Natural History) I found by chance a letter written by Boudier on 21st July 1878, probably directed to M. C. Cooke (Fig. 1). In this Boudier explained how he arrived at his enlargement of the spore-drawings.

It is evident that Boudier himself strongly doubted whether the numeral he stated was correct. Probably 340 as well as the other figures he gave for his enlargements of the microscopical drawings refer to the optical enlargements by his microscope of certain combinations of objectives and oculars. This he inferred from information received from Nachet, the manufacturer of his instrument.

It was Boudier's (*1886*: 138) habit to measure the objects drawn by means of a self-made scale. The scale from his letter about the drawings indicated by $\frac{\text{"340"}}{1}$ makes it possible to determine the correct sizes of the spores and to establish the exact enlargement of these drawings. Since the measuring-scale in its total length represents 0.1 mm, the correct enlargement of his early spore-drawings is in reality about 840 times. This fully agrees with the enlargement Boudier gave for the spore-drawings in his succeeding illustrated paper (Boudier, *1881*).

In *1885*, however, Boudier slightly changed the usual enlargement of his spore-drawings to 820 times (instead of 840). From then on his values for microscopic sizes in the descriptions were exaggerated. After that, because of an error in the construction of his measuring-scale (cf. Maire, *1917*: 247; *1926:* 47, his measurements were usually about one-tenth too high.

E. BOUDIER
PHARMACIEN DE 1re CLASSE
De l'École supérieure de Paris
Lauréat
DE L'ACADÉMIE DE MEDECINE
ET DES HOPITAUX
A MONTMORENCY
(Seine-et-Oise)

Montmorency, le 21 Juillet 1878.

Mon cher Collègue,

. . . . . .

Je vous remercie beaucoup cher Monsieur, des observations que vous me donnez sur les espèces dont je vous ai envoyé les Dessins, Mais comme vous je suis très indécis sur la valeur à accorder aux $\frac{340}{1}$ que je mets sur mes Dessins.

Mon Microscope est un Microscope de Nachet. J'indique le n° $\frac{340}{1}$ comme celui que ma donné m' Nachet lui-même comme représentant l'amplification produite par son objectif n°6 et son oculaire n°1. J'emploie cette formule comme plus commode

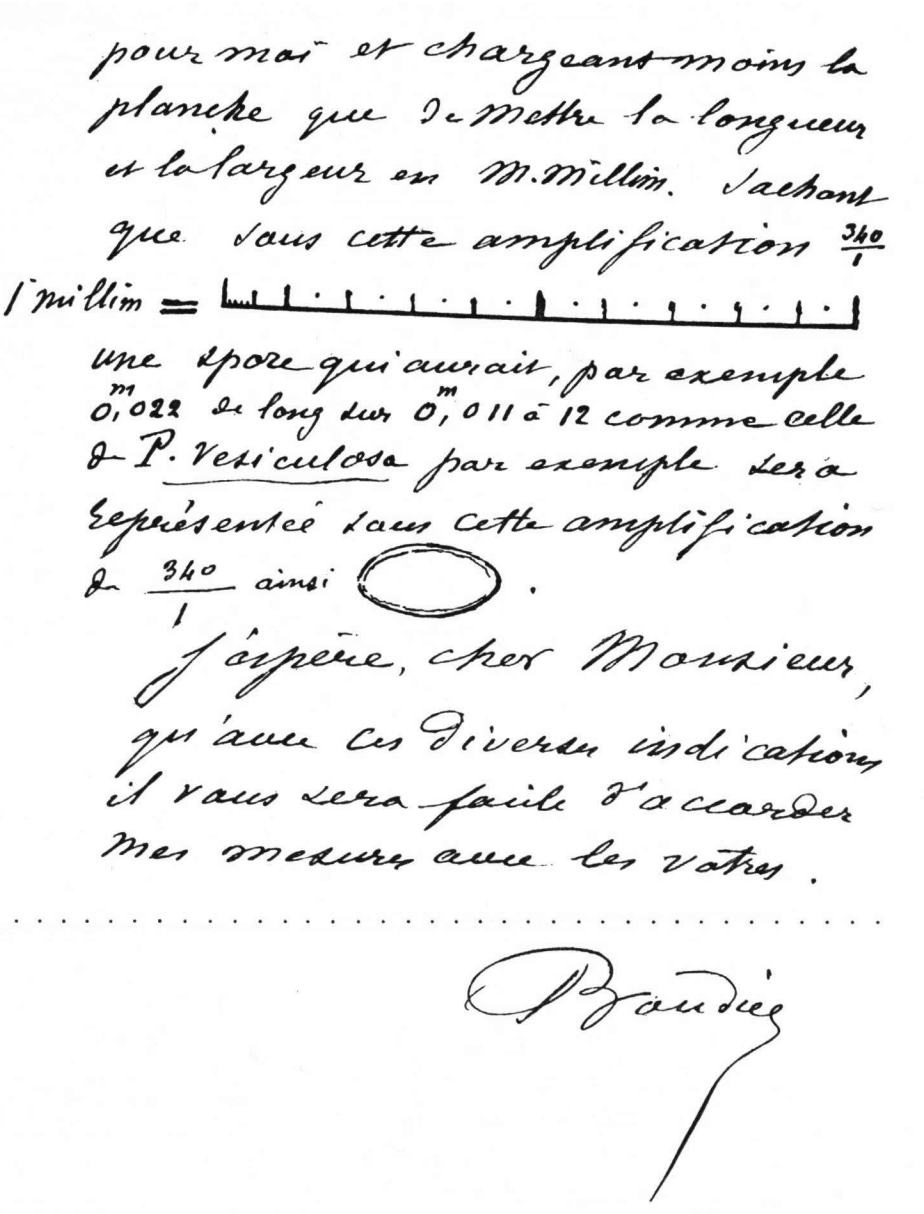

Fig. 1. — Part of Boudier's letter with a scale used to measure spores in his early spore-drawings that were enlarged about 840 times. (Natural size).

Since Boudier's drawings are models of accuracy and no deviations from the reproduction-scale of the later drawings could be established, even now it is possible to measure the spores in these drawings with a correct measuring-scale.

Using the scale reproduced in Figure 2 details can be measured from drawings with an 820-times enlargement, thereby making it possible to control the spore-measurements in most of Boudier's publications after 1885. Among these is his 'Icones Mycologicae' (Boudier, *1904–1911*).

Although this method of measuring is very indirect it provides more reliable spore-sizes for most of Boudier's fine drawings than those given previously.

Fig. 2. — Scale to measure spores in Boudier's drawings with an enlargement of 820 times.

References

BOUDIER, J. L. E. (1869). Mémoire sur les Ascobolés. *In* Annls Sci. nat. (Bot.) V **10**: 191–268 *pls 5–12*.

—— (1881). Nouvelles espèces de champignons de France. *In* Bull. Soc. bot. Fr. **28**: 91–98 *pls 2–3*.

—— (1885). Description de quelques espèces nouvelles de champignons basidiosporés. *In* Bull. Soc. bot. Fr. **32**: 282–285 *pl 9*.

—— (1886). Considérations générales et pratiques sur l'étude microscopique des champignons. *In* Bull. Soc. mycol. Fr. No. 3 / **2**: 134–192.

—— (1904—1911). Icones mycologicae, ou iconographie des champignons de France. "1905—1910". Paris.

MAIRE, R. (1917). Schedae ad Mycothecam boreali-africanam. *In* Bull. Soc. Hist. nat. Afr. N. **8**: 242–261.

—— (1926). Remarques sur les causes de divergences entre les auteurs au sujet des dimensions des spores. *In* Bull. Soc. mycol. Fr. **42**: 43–50.