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**Parasitology**

# REVISION OF THE *SPHAEROSPORA* THÉLOHAN, 1892 (*MYXOSPOREA*) PROTOZOANS PARASITISING THE EEL, *ANGUILLA ANGUILLA* (L.)

# REWIZJA PIERWOTNIAKÓW *SPHAEROSPORA* THÉLOHAN, 1892 (*MYXOSPOREA*) PASOŻYTUJĄCYCH U WĘGORZA, *ANGUILLA ANGUILLA* (L.)

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The generic affiliation of protozoans described as *Sinuolina gilsoni* Debaisieux, 1925 is discussed. The species is transferred to the genus *Sphaerospora* Thélohan, 1892 and regarded as synonymous with *Sinuolina gilsoni* Debaisieux, 1925; *Sphaerospora anguillae* Wierzbicka, 1986; and *Hoferellus gilsoni* (Debaisieux, 1925) Lom, Dykova, 1989. In addition, the parasites *Sphaerospora reichenowi* Jacob, 1953 and *S. sphaerocapsularae* Wierzbicka, 1986 are shown to be separate species.

Protozoans dwelling in the urinary bladder of eel were described for the first time by Debaisieux (1925) as *Sinuolina gilsoni* sp.n. In that author's description, the seam line on the spores was mostly straight, and occasionally more or less undulating. Kudo (1933), basing his opinion on Debaisieux's data, classified the species with the genus *Sinuolinea* David, 1917, too. Subsequently, Wierzbicka (1986a) found the protozoans in the urinary bladder of the eel and described them as *Sphaerospora anguillae* sp. n. Camparison of Wierzbicka's materials with the description and figures published by Debaisieux (1925) shows unequivocally that *S anguillae* belongs to the species described earlier. However, the generic affiliation of the protozoans raises some doubt as the spores show a well-marked, straight seam which runs on a plane perpendicular to that of the polar sacs. A similar course of the seam is seen in the figure published by Lom and Dykova (1989) who nevertheless identified the protozoans as *Hoferellus gilsoni* (Debaisieux 1925).

The polar sacs of the *Hoferellus* Berg, 1898 spores are located on the plane identical with that of the seam. This point is very important and, according to Šulman (1984), charac-

teristic not only of the genus *Hoferellus*, but also of the sub-order *Platysporea* Kudo, 1919 the genus belongs to. The *Sphaerospora* Thélohan, 1892 protozoans belong to a different sub-order, the *Eurysporea* Kudo, 1919 the spores of which have their polar sacs located on a plane perpendicular to that of the seam. This pattern of the seam line is observed in the spores of the species in question, for which reason it should be classified with the genus *Sphaerospora* as *S. gilsoni* (Debaisieux 1925) Wierzbicka, 1994. The synonyms of the species are: *Sinuolina gilsoni* Debaisieux, 1925; *Sphaerospora anguillae* Wierzbicka, 1986; and *Hoferellus gilsoni* (Debaisieux 1925) Lom, Dykova, 1989.

Besides the taxonomic affiliation of the species, noteworthy is also the size of its polar sacs. Lom and Dykova (1989) write that polar sacs of the *Hoferellus gilsoni* spores are frequently unequal in size. The present author, working on both fresh and stained materials, observed spores having polar sacs equal in size (Wierzbicka 1986a); it is only at some angle of mounting the spores that one can get an impression of their sacs differing somewhat in size.

*Sphaerospora sphaerocapsularae* Wierzbicka, 1986 is another species parasitising the eel's urinary bladder. The parasite's spores are somewhat similar to those of *Sphaerospora reichenowi* Jacob, 1953 dwelling in the eel's intestine. The description given by Jacob is not detailed enough and lacks a figure; however, considerable differences between the two species cannot escape attention. Jacob's work (Jacob 1953) was not taken into account when *S. sphaerocapsularae* was being described (Wierzbicka 1986b), for which reason the characters different in the two parasites are listed below:

| | *S. reichenowi* | *S. sphaerocapsularae* |
|---|---|---|
| location | intestinal mucosa | urinary bladder |
| | spores concentrated in white cysts (visible with naked eye) | no cysts |
| spore shape | subspherical | oval (length somewhat exceeding thickness and markedly exceeding width) |
| spore surface | pronounced striation | very delicate striation |
| spore dimensions | (μm, fresh material): | |
| diameter | 9 - 10 | length: 10.4-12.8 (11.39) |
| | | thickness: 9.6-12.0 (10.38) |
| | | width: 8.0-9.2 |
| polar sac diameter: | 4.0 | 2.8 - 3.8 (3.41) |

Polar sacs of *S. reichenowi* are somewhat larger than those of *S. sphaerocapsularae*, the spores of the former being slightly smaller than those of the latter. Consequently, polar sacs of *S. sphaerocapsularae* occupy about one-third of a spore, while the *S. reichenowi* polar sacs take up almost half of the spore (which can also be observed in a plate published by Jacob). The differences between the species, presented above, demonstrate the separate identity of the two species.

To sum up, it can be concluded that the eel can be infested by three protozoan parasites of the genus *Sphaerospora*, namely *S. gilsoni* (Debaisieux 1925) Wierzbicka 1994; *S. sphaerocapsularae* Wierzbicka 1986; and *S. reichenowi* Jacob 1953. The generic affiliation of *S. reichenowi* is not completely clear since Jacob gave no indication as to the course of the spore's seam.

Translated by: Dr Teresa Radziejewska

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### STRESZCZENIE

Przedyskutowano przynależność rodzajową pierwotniaków opisanych po raz pierwszy jako *Sinuolina gilsoni* Debaisieux, 1925.

Gatunek ten przeniesiono do rodzaju *Sphaerospora* Thélohan, 1892 a za jego synonimy uznano: *Sinuolina gilsoni* Debaisieux, 1925, *Sphaerospora anguillae* Wierzbicka, 1986 i *Hoferellus gilsoni* (Debaisieux 1925) Lom, Dykova, 1989. Ponadto zamieszczono zestawienie cech różniących pasożyty *Sphaerospora reichenowi* Jacob, 1953 i *S. sphaerocapsularae* Wierzbicka, 1986 wskazujące na ich odrębność gatunkową.


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