

On the validity of some Indian species of the genus *Spinitectus*, Fourment, 1883

With a key of the Indian species

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Résumé

L'auteur discute la validité de certaines espèces de *Spinitectus* que Sood (1968) a fait tomber en synonymie avec *S. mastacembeli* Karve et Naik (1951). Cette étude inclut également une discussion sur la validité de *S. komiyai* Sahay et Prasad (1965) que Sood (1968) a fait tomber en synonymie avec *S. pseudotropii* Agrawal (1965). Une clé des espèces indiennes du genre *Spinitectus* est donnée.

Summary

In the present paper the author has discussed the validity of some *Spinitectus* species which Sood (1968) synonymised with *S. mastacembeli* Karve and Naik (1951) without going into the details and without applying the rule of priority. The paper also includes a discussion on the validity of *S. komiyai* Sahay and Prasad (1965) which Sood (1968) synonymised with *S. pseudotropii* Agrawal (1965). A key to the Indian species of the genus *Spinitectus* has been developed.

Introduction.

The genus *Spinitectus* was included in the family *Rictulariidae* under subfamily *Rictulariinae* by Yorke and Maplestone in 1926. The genus however, was placed as an appendix to the subfamily *Thelaziidae* by Baylis and Daubney in 1926. In 1928 it was included in the new subfamily *Rhabdochonidae*, by Travassos, Artigas and Pereira. They included three genera viz., *Rhabdochona* Railliet (1916), *Spinitectus* Fourment (1883) and *Cystidicola* Fischer (1798) in this new subfamily. The author has recognised the fundamental similarity of structure among these genera besides their common property of being parasitic in the same group of hosts — the fishes. Skrjabin (1946) included all *Spirurata* of fishes into a new subfamily *Rhabdochonidae* which consisted of three subfamilies viz., *Rhabdochoninae*, *Cystidicolinae* and *Spinitectinae*. He also supported and emphasized the host relationship in them. The author, however, is not in agreement with Skrjabin (1946) and agrees with Travassos in creating the subfamily *Rhabdochoninae* to accommodate the related forms. Ali (1956) proposed to raise the genera *Rhabdochona*, *Cystidicola* and *Spinitectus* to the subfamily status with their inclusion in the family *Thelaziidae*. In fact, the type genera of the three subfamilies originally included in the family *Thelaziidae* by Baylis and Daubney (1926). They however, were unjustified in reducing the family *Thelaziidae* to the subfamily rank. Yorke and Maplestone (1926) were justified in shifting the genus *Spinitectus* from *Rictulariidae* to the family *Thelaziidae* on the ground that the stoma of *Spinitectus* differed radically from that of *Rictularia*. At present there are 13 Indian species of the genus *Spinitectus* out of which *S. corti* Moorthy (1938), Ali (1956), *S. major* Khera (1954), *S. singhi* Ali (1956), *S. thapri* Khera (1954), *S. armatus* Ali (1956), *S. bengalensis* Chakravarty (1966) and *S. minor* Baylis (1939) have been outright rejected as species under the genus *Spinitectus* by Sood (1968). Sood (1968) has also synonymised *S. komiyai* with *S. pseudotropii* Agrawal (1956).

In the present paper the author intends to examine the validity of all such species which have been synonymised with *S. mastacembeli* Karve and Naik (1951) and *S. pseudotropii* Agrawal (1965) respectively.

Characters of importance in species creation.

1. SPICULES : Presence of spicule is a very important character for specific diagnosis. It is only in one case of *Spinitectus* (*S. indicus* Verma and Agrawal, 1932) where spicule is stated to be equal. Left spicule, invariably in all Indian species of the genus *Spinitectus* is larger than the right. It is eight times larger than the right in *R. singhi*, seven times in *S. thapri* and *S. major*, six times in *S. notopteri*, *S. mastacembeli* and *S. armatus*; five times in *S. corti* and *S. bengalensis*, three times in *S. pseudotropii*,

* *S. indicus* Verma et Agrawal, 1932; *S. corti* Moorthy, 1938; Ali, 1956; *S. notopteri* Karve et Naik, 1951; *S. mastacembeli* Karve et Naik, 1951; *S. neilli* Karve et Naik, 1951; *S. major* Khera, 1954; *S. thapri* Ali, 1956; *S. singhi* Ali, 1956; *S. armatus* Ali, 1956; *S. longipapillatus* Ali, 1956; *S. bengalensis* Chakravarty 1966; *S. komiyai* Sahay et Prasad, 1965; *S. pseudotropii* Agrawal, 1965.

2.7 times in *S. komiyai* and two times in *S. longipapillatus*. Such a distinct variability in the spicule ratio should be given specific value. As regards its visibility is concerned, a little care to see them under dark ground illumination would do.

2. CAUDAL ALAE : It is only in *S. indicus* and *S. major* where the caudal alae are said to be absent. It is rudimentary in *S. pseudotropii* moderately developed in *S. notopteri* and *S. neilli*, rest in all species it is present. Sood (1968) on one hand, without seeing the worm *S. major* of Khera wrote : « The author is of the opinion that since Khera has taken into consideration only the lateral view of male tail, he might have overlooked the presence of caudal alae », and on the other himself describes *S. pseudotropii* and *S. mastacembeli* taking into consideration only the lateral view of the male tail.

Contention of an author without seeing the holotype is of least scientific value. The author thinks this character (presence or absence of caudal alae) an important one and proposes to use it for specific determination.

3. MALE TAIL AND THE PAPILLAE : The shape and nature of the tail and the papillae number appear to be a constant feature in the members of the genus *Spinitectus* and is considered by the author as good characters in identifying species. The number of the caudal papillae is 9 in *S. indicus*, *S. neilli*, *S. major*, *S. singhi* and *S. pseudotropii*, 16 in *S. notopteri*, 13 in *S. corti*, 12 in *S. mastacembeli*, 10 in *S. thapri* and *S. armatus*, 11 in *S. bengalensis* and 8 in *S. longipapillatus* and *S. komiyai*. If Sood (1968) would have referred to the discussion of each of these species, he would have marked hardly any author considering this character to be insignificant which he considered a variable character. The author considers this character to be a very important one in identifying species.

4. MUSCULAR AND GLANDULAR ŒSOPHAGUS : Sood (1968) while considering and discussing the synonymy of *S. corti*, *S. major*, *S. thapri*, *S. armatus*, *S. singhi* and *S. bengalensis* with *S. mastacembeli* has made no mention of this character neither he has compared the ratio of muscular and glandular Œsophagus in his table no. I on page 104. This character is undoubtedly good for identifying species and the author is of the opinion that an author must be cautious to take this into consideration, while creating new species.

5. POSITION OF VULVA : This is also an important character for specific determination which cannot be ignored in any case. Generally the position of vulva is near the anus in all Indian species of the genus *Spinitectus*. It is only in three cases (*S. komiyai*, *S. mastacembeli* and *S. indicus*) that the vulva is pre-equatorial and in only one case it is at the junction of middle and posterior third of the body. The author is of the opinion that for species creation only few characters should not be considered but a species be created taking into consideration as many characters as possible. In consideration of these points the author consider *S. corti*, *major*, *thapri*, *armatus*, *singhi* and *bengalensis* as valid species.

Sood (1968) has also synonymised *S. komiyai* Sahay and Prasad (1965) with *S. pseudotropii* Agrawal (1965) without seeing the date of publication of these papers.

The former species was described in 1965 by Sahay and Prasad which was published in the *Jap. Jour. Med. Sci. Biol.* in the month of June while the latter in *Indian. J. Helminthol.*, July, 1965. As such *S. komiyai* gets the law of priority and stands as species while *S. pseudotropii* of Agrawal may be considered a synonym of it.

KEY TO THE INDIAN SPECIES OF THE GENUS SPINITECTUS

Fourment, 1883

1. Parasites of fishes and eggs without polar filament 2
2. Spicule equal *S. indicus*
Spicule unequal 3
3. Left spicule more than three times the length of the right spicule 4
Left spicule less than three times the length of the right spicule 5
Left spicule three times the length of the right spicule *S. pseudotropii*
4. Spicule ratio 8 : 1 (LS : 0.64, RS : 0.081 mm) *S. singhi*
Spicule ratio 7 : 1 6
Spicule ratio 6 : 1 7
Spicule ratio 5 : 1 8
5. Spicule ratio 2.74 : 1 (LS : 0.247, RS : 0.09 mm) *S. komiyai*
Spicule ratio 2 : 1 9
6. Caudal papillae 10 pairs *S. thapri*
7. Caudal papillae more than 10 pairs 10
Caudal papillae 10 pairs 11
Caudal papillae less than 10 pairs 12
8. Male and female less than 2 mm, spicules LS : 0.25-0.26, RS : 0.052-0.55 mm) .. *S. corti*
Male and female between 2-4 mm, LS : 0.336-0.468, RS : 0.072-0.096 mm)
..... *S. bengalensis*
9. Caudal papillae 9 pairs *S. neilli*
Caudal papillae 8 pairs *S. longipapillatus*
10. Caudal papillae 16 pairs *S. notopteri*
Caudal papillae 12 pairs *S. mastacembeli*
11. First three rows of spines closer *S. armatus*
12. Caudal papillae 9 pairs *S. major.*

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* Details of the position of vulva in *S. notopteri* and *S. neilli* were not available hence were not considered here.

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