

im ersten Ganglion. Es wird hierauf auf Neurone II. Ordnung umgeschaltet.

Bei Anwendung nichtelectiver Methoden wird man wegen der engen Zusammenlagerung die hindurchziehenden Fasern für die Fortsetzung der Retinulafasern halten, wie es ja auch viele Autoren angenommen haben.

Fassen wir also nochmals kurz zusammen, so können wir unsere eingangs gestellten Fragen folgendermaßen beantworten. Die Retinulafasern der Komplexaugen enden im ersten Ganglion; die Neurommatidien sind der Ort, wo die Fibrillen dieser Fasern (Neurone I. Ordnung) auf die Fibrillen der Neurone II. Ordnung umgeschaltet werden; das erste Ganglion ist daher ein selbständiges Centrum, das nicht zum peripheren Perceptionsapparat als solchem zuzurechnen ist, sondern so wie die übrigen optischen Ganglien als eine besondere Differenzierung des (sekundären) Gehirns zu betrachten ist.

Meinem hochverehrten Chef, Herrn Prof. Dr. C. J. Cori, danke ich herzlichst für vielfache Unterstützung.

Triest, 10. März 1914.

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6. On the *Sagitta marina* of Rumphius.

By Sydney J. Hickson, Manchester.

eingeg. 23. März 1914.

In the d'Amboinsche Rareitkamer published by Rumphius in Amsterdam in the year 1705 there is an account of two marine organisms which he studied when in the Malay Archipelago and named *Sagitta marina alba* (1^o soorte) and *Sagitta marina nigra* (2^o soorte) respectively.

There can be no doubt that both these organisms were sea-pens and very little doubt that one of them, the *Sagitta marina alba*, was a member of the genus now known as *Virgularia*. The other — the *Sa-*

gitta marina nigra — was named by Pallas *Pennatulula grandis* and subsequently referred to the genus *Pteroeides* by Herklots under the name *Pteroeides grande*.

Kölliker however in his classical work "Anatomisch-systematische Beschreibung der Alcyonarien", published in 1872, described a new species of *Virgularia* (*V. rumphii*), which he declared to be synonymous with the *Sagitta marina* (2^o soorte) of Rumphius.

Having had the opportunity of studying a very large collection of Pennatulacea from the Malay Archipelago collected by the dutch exploring expedition "Siboga", my attention has been called to this point and I have come to the conclusion that Kölliker's reference of the *Sagitta marina nigra* to the genus *Virgularia* was an error. It was a *Pteroeides*.

In the first place I may call attention to two mistakes in Kölliker's monograph (p. 202).

The form referred to by Rumphius as the "tweede soorte" was his *Sagitta marina nigra*, not *alba*, and the date of publication of the Rariteitkamer was 1705 not 1740.

The only reason, so far as I can discover, for his identification of the "nigra" form as a *Virgularia* was that the specimen he examined and named *Virgularia rumphii* was obtained by E. v. Martens on the exact spot, namely off the Castell Victoria at Amboyna, on which Rumphius observed his *Sagitta marina nigra*.

The description given by Rumphius of this species is so remarkably detailed — for the period in which he wrote — that it may be fairly regarded as one of the most important and interesting pages in the literature of the group.

In the account he gives of the "tweede soorte", the one with which we are more particularly concerned, he states that the "Zeespatten" or axes, as we now call them are black, in contrast to those of the other kind, which are white.

I have examined a very large number of specimens of *Virgularia* from the Malay Archipelago and elsewhere and in all cases the axes are white or very pale yellow, and among all the Pennatulids it is only in certain specimens belonging to the genus *Pteroeides* which are gray in colour that the axis could by any stretch of the imagination be called black.

It was this character which first caused me to doubt the correctness of Kölliker's identification but on reading carefully the following account of the leaves my doubt was strongly confirmed.

Rumphius describes the leaves as like "cocks combs, doch veel dunder en uitgebreidt door fyne straaen, in't rond staande, als vischoo-

ren ook met subtile punten uitsteekende, digt boven malkander, en overdwars aan den worm doch zoodanig dat men met eenen vinger door tusschen kan komen”.

Now, in none of the species of *Virgularia*, can the leaf be described as like the “single” comb of a malayan cock, but the leaves of *Pteroeides* can fairly be described as like thin cocks combs with a number of rays (straalen), spread out like fish fins, ending in sharp (subtile) projecting points.

Moreover it would be very inaccurate to say that in any *Virgularia* it is possible to place a finger between the leaves, whereas in some species of *Pteroeides* this might be done.

The colour of this “2° Soorte” is described as pale blue and gray not flesh coloured as in the 1° soorte and this description is quite consistent with its being a *Pteroeides* and not a *Virgularia*.

Rumphius also remarks that when the 2° soorte is imprudently grasped with the hand it causes a painful itching followed by blistering of the skin and that it is phosphorescent, whilst he says he did not observe either the stinging sensation or the phosphorescence in any specimen of the 1° soorte.

We know that the mediterranean species of *Pteroeides* is phosphorescent, in fact it was called *Penna marina phosphorica* by Seba on that account, but it is curious that there is no statement that any species of *Virgularia* is phosphorescent.

In the summer of last year I wrote to Professor Herdman who was dredging off the coast of Scotland and asked him to observe the phosphorescence of the Pennatulids he collected and the following extract from his letter in reply is of interest in this connexion. “The *Virgularia* gave no sign of phosphorescence at all — to my surprise — while the young *Funiculinas* dredged along with it were glowing brilliantly.” It would be interesting to find out whether other species of the genus *Virgularia* show a similar lack of phosphorescent power.

Professor Herdman also informs me that *Virgularia mirabilis* does not sting the hand, but there is also no evidence that I can find that *Pteroeides* does sting. The sharp projecting points of the rays of *Pteroeides* suggest that it may have some stinging powers and I should be glad to know if any one has been stung by a species of this genus.

The statement made by Rumphius then that his *Sagitta marina nigra* stings and is phosphorescent supports the view that it is not a *Virgularia*. The only difficulty that I have found in identifying this sea-pen of Rumphius as a species of *Pteroeides* is the statement that it is 2 to 2½ feet in length. Very few specimens of this genus are more than 300 mm in length and a specimen 700 mm would be a giant of its race.

Is it possible that in this respect the account of Rumphius is untrustworthy? In the large collection of *Pteroeides* and *Virgularia* made by the Siboga expedition there is not a single specimen that approaches a length of two feet.

With this difficulty to contend with it seems impossible to determine the species to which the *Sagitta marina nigra* belonged but I would suggest that probably it was the species now known as *Pteroeides argenteum* (Ellis and Solander).

I have called attention to this matter because since the publication of Kölliker's monograph in 1872, zoologists have accepted, without question, his erroneous view that the *Sagitta marina nigra* of Rumphius is the same as *Virgularia rumphii* (Kölliker).

7. Zur Kenntnis der Harpacticidenfauna Deutschlands: *Canthocamptus weberi* nov. spec.

Von Erich Kessler, Leipzig.

(Mit 7 Figuren.)

eingeg. 27. März 1914.

Am 16. und 20. März dieses Jahres sammelte ich Moosmaterial in Gottschdorf bei Schwepnitz in Nordsachsen an jener Stelle, wo ich in den beiden Jahren vorher *Parastenocaris brevipes* mihi aufgefunden hatte.

Das Material enthielt neben andern Harpacticidenformen auch eine sehr kleine *Canthocamptus*-Art, die ich nicht mit einer andern Art identifizieren konnte. Bei der genaueren Untersuchung — zunächst der weiblichen Tiere — zeigte es sich, daß es sich um eine neue Art handelt, die dem *Canthocamptus pygmaeus* Sars nahe steht, von diesem aber in sehr viel Punkten abweicht, auch wesentlich kleiner als dieser ist. Die neue Art fällt sofort durch den Bau des Analoperculums auf, dessen Rand zwei oder drei voneinander weit abstehende Zähne trägt. Bei der Durchsicht der Harpacticidenliteratur stieß ich auf *Canth. typhlops* Mrázek, der nach einem einzigen männlichen Exemplare unvollkommen beschrieben ist¹. Dieser *Canth. typhlops* ist charakterisiert durch einen Analdeckel, der in »drei große, stumpfe Zähne« ausgezogen ist. Ich glaubte nunmehr, *Canth. typhlops* wiedergefunden zu haben. Die Untersuchung des Männchens meiner Art zeigte mir aber, daß die beiden Formen wohl in einigen wenigen Punkten sich ähneln, in weit mehr aber voneinander abweichen.

Beide Formen ähneln einander in folgenden Punkten:

1) Das Analoperculum ist groß, bei *Canth. typhlops* und bei *Canth. weberi* n. sp. sind 3 Zähne vorhanden. Bei *Canth. weberi* n. sp. kom-

¹ Mrázek, A., Beitrag zur Kenntnis der Harpacticidenfauna des Süßwassers. Zool. Jahrb. Abt. f. Syst. Bd. 7. Heft 1. 1893.

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