

Querrunzeln in der Mitte. Fühlergeißel dünn, etwa 53gliedrig; jedes Glied 3 bis 2mal so lang wie breit.

Körperlänge 6—6½ mm; Abdominallänge 3 mm; Fühlerlänge 12 mm; Vorderflügelänge 6 mm; Flügelspannung 13 mm.

Süd-Schanstaaten (Siam). Pekon, Loikaw R. 29/30. Januar 1903. 2 ♂.

Gesammelt von W. Micholitz.

Stantonina flava Ashm. 1904.

Stantonina flava Ashm.; Ashmead, Proc. Unit. St. Nat. Mus. Vol. XXVIII. 1904. p. 147. Pl. I. Fig. 2.

Stantonina Kriegeri nov. spec.

Bräunlichgelb; Fühlergeißel rotbraun; Augen schwarz oder bräunlich. Umgebung der Ocellen schwarzbraun, ebenso ein Längsstrich an der Außenseite des Fühlerschaftes; schwärzlich bis bräunlich sind: Spitze des Hinterschenkels, die Hinterschienen, die Tarsen der beiden letzten Beinpaare und das 5. Tarsenglied der Vorderbeine. Tibiensporne gelb. Krallen schwarz. Scheiden des Legerohres braun. Flügel hyalin, Vorderflügelspitze kaum merklich angeraucht; Adern hellbraun bis braun, Membran des Pterostigmas gelbbraun; Membran intensiv grün bis gelbgrün irisierend, an einigen Stellen, besonders am Rande, nach Rot und Blau neigend.

Antedorsum des Mesothorax ohne Längsfurchen. Parapsidenfurchen scharf. Mittelsegment poliert glatt, kugelig aufgeblasen. Fühlergeißel dünn, etwa 37gliedrig; jedes Glied 1½ bis 3mal so lang wie breit. Legerohr etwa von Abdominallänge.

Körperlänge 4—4½ mm; Abdominallänge 2½ mm; Fühlerlänge 5½ mm; Länge des Legerohres 2¾ mm; Vorderflügelänge 4½ mm; Flügelspannung etwa 10 mm.

Columbien. Sanjil, Juni 1901. 6 ♂, 2 ♀. Ibagué, Tolima. Febr. 1901. 5 ♂.

Gesammelt von W. Micholitz. Aus der Kollektion des Herrn Prof. Dr. R. Krieger.

Berlin, 27. November 1904.

5. Sexual phases in Geonemertes.

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(With 2 figures.)

eingeg. 10. Dezember 1904.

In the eight species of Land Nemerteans which have thus far been described great variation appears to exist in regard to the condition of

the worm at the time of sexual maturity. In at least three of these eight forms (*Geonemertes chalicophora* Graff¹, *G. novae-zealandiae* Dendy and *G. graffi* Bürger) the males have not as yet been discovered, although the worms have been supposed to be separate sexes. In *G. australiensis* Dendy both sexes have been observed, the males being much less common and of smaller size than the females. In *G. rodericana* (Gulliver) the sexes are likewise separate. Only a single species of the genus (*G. palaensis* Semper) has hitherto been found to be hermaphroditic, although Graff's original description states that such is the case in *G. chalicophora*. Böhmig, however, after an examination of Graff's specimens decided that the latter species is actually dioecious. None of them have hitherto been found to be viviparous.

An examination of large numbers of sexually mature individuals of the Bermuda Land Nemertean (*G. agricola* W.-Suhm) has revealed several interesting features in regard to its sexual phases, for this species proves to be not only hermaphroditic but also viviparous.

In the months of June and July the majority of the individuals contained embryos of such large size and in such numbers as to encroach largely upon the intestinal canal, proboscis sheath, and other organs, and to distend the body walls nearly to the point of rupture (Fig. 1, 2). The most remarkable feature of such individuals, however, lay in the fact that in addition to the large embryos they possessed very small gonads of which some contained immature ova and others spermatozoa in all stages of formation.

Other individuals of much smaller size were filled with large spermaries with mature spermatozoa, but were without indication of ovaries or embryos. Such individuals, representing the purely male phases, were much less common than those with eggs or embryos, occurring in about the proportion of 1 to 12.

Specimens collected in April and sent alive to the writer contained no embryos, nor did any of them indicate that they were hermaphroditic. They all appeared to be of the female sex and were provided with large and nearly ripe ova. They may be considered as representing the purely female phase of sexuality. They were without exception of large size for the species, and it is possible that the much smaller males may have been present in the same locality and were overlooked by the collector.

Somewhat later in the season hermaphroditic forms appear, some of which first discharge their spermatozoa and then form ova, which, after fertilization by another individual, develop into embryos within the

¹ According to Böhmig, Ztschr. f. wiss. Zool., Bd. LXIV, S. 484, 1898.

body. Such individuals are obviously protandric and recall the condition described by Montgomery² for *Stichostemma*.

In the hermaphroditic forms which give rise to embryos within the body it would seem that the body tissues would be sufficiently taxed in supporting the embryos. Yet at this same time, as stated above, small gonads of both kinds of sexual products make their appearance. Although such sexual glands are but a small fraction of the size of one of the mature embryos, some of the spermaries often contain a small number of ripe spermatozoa. The ovaries, however, are always very immature, and apparently do not mature any of the contained ova until the following season when the worm may again assume the female form.

The small spermaries, on the other hand, very possibly represent the remains of previously well developed glands which have discharged the greater portion of their contents before the maturity of the ova, which at this time have developed into embryos. The fate of such small spermaries is uncertain, for it is improbable that their spermatozoa are discharged at a time when ripe eggs are not present in any individuals. It is possible that in some worms they remain until the breeding season and discharge their spermatozoa in advance of the maturity of the ova in the same individual. This would account for the protandric form. In other cases it seems possible that the small spermary might be absorbed by the other tissues of the body, the individual then being looked upon as a female.

No doubt in many instances the development of the large and numerous embryos weakens the body of the parent to such an extent as to render it susceptible to any unfavorable condition, which may perhaps cause death, although there is sufficient evidence to show that the worms often live for two or more seasons.

The sexual phases are further complicated by the appearance of undifferentiated glands which form both kinds of sexual products. Such glands often occur interspersed among others which form ova only or spermatozoa only. In such an ovo-testis both kinds of genital products develop together until the breeding season, when, as a rule, the spermatozoa are discharged before the complete maturity of the single ovum developed in the same gland.

There is no reason for believing that self fertilization normally takes place in this form, although in a worm which produces both kinds of sexual products such a process may accidentally occur, either from a precocious maturity of ova or from retardation in the development of some of the spermatozoa.

² Ztschr. f. wiss. Zool., LIX, 1895.

Fig. 1.

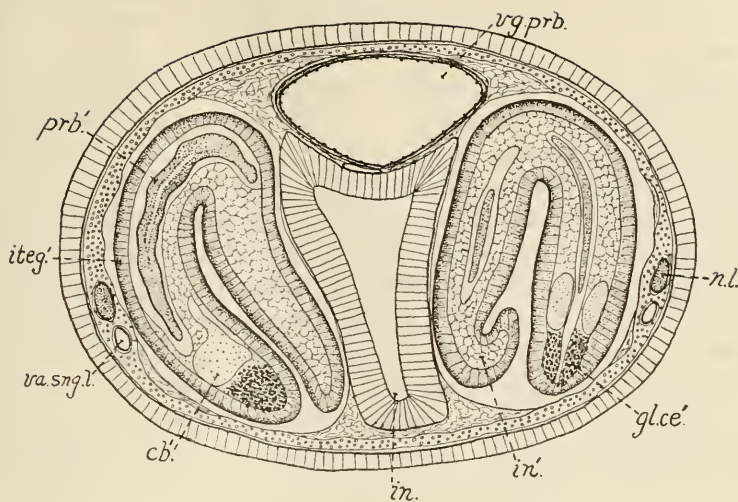


Fig. 2.

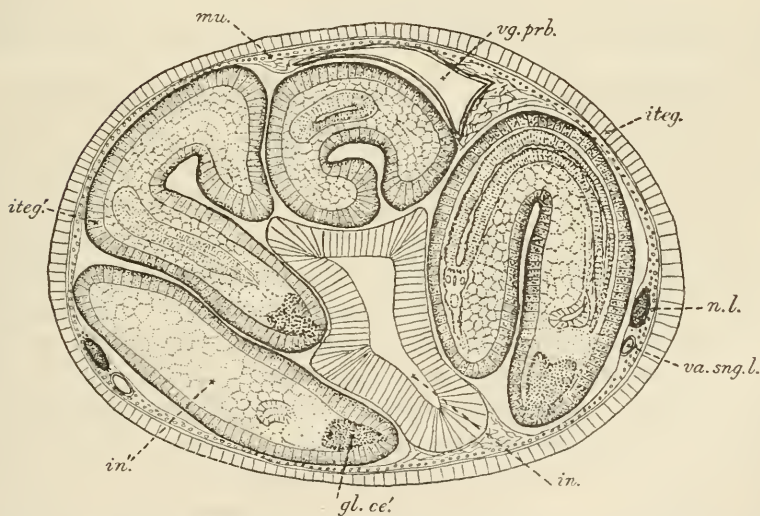


Fig. 1. *Geonemertes agricola*. Transverse section of body containing nearly mature embryos. One embryo appears on each side of intestine (*in*) in its characteristic position, with both head and tail directed toward ventral side of parent's body; *vg.prb.*, proboscis sheath; *n.l.*, lateral nerve; *va.sng.l.*, lateral blood vessel; *gl.ce'*, cephalic glands of embryo; *in'*, endodermic mass which later forms intestine; *cb'*, brain, *integ'*, integument, and *prb'*, proboscis of embryo. $\times 70$.

Fig. 2. *Geonemertes agricola*. Transverse section of body, showing crowding of embryos when nearly mature and their encroachment on the space usually occupied by intestine (*in*) and proboscis sheath (*vg.prb.*). Sections of 4 embryos are represented, all of which have their heads directed toward ventral side of parent's body; *integ*, integument; *mu.*, muscular layers, which are much distended by growth of embryos. Other reference letters as in Fig. 1. $\times 70$.

Each ovary or ovo-testis usually gives rise to a single ovum which, when mature, has free communication with the exterior of the body by means of a duct which forms at the same time. This allows the entrance into the ovary of spermatozoa from another individual. After fertilization the duct closes up and the ovum is again removed from contact with the exterior.

The embryo develops without metamorphosis until it reaches a length of from 1,5 to 2 mm. This length is in some instances twice as great as the diameter of the body of the parent, so that the embryo lies with its body sharply folded, the head and posterior extremity being nearly in contact. As shown in Fig. 1, in its natural position the embryo commonly lies with its extremities near the ventral side of the parent's body. Sometimes, however, it stretches out lengthwise of the body, and can doubtless change its position to a considerable extent by its own muscular exertions. In some cases four or more embryos may encountered in a single transverse section of the body (Fig. 2).

When fully mature and ready to leave the parent's body the young worm is whitish in color, with minute ocelli, delicate proboscis armature, and practically all the organs of the adult except the reproductive glands.

6. Ein wiedergefundenes Tier: *Rhabdomoligus ruber* Keferstein.

(Vorläufige Mitteilung.)

Von Hubert Ludwig (Bonn).

eingeg. 15. Dezember 1904.

Seitdem Keferstein im Jahre 1863 (Zeitschr. f. wissensch. Zool., XII. Bd. S. 34—35, Taf. XI Fig. 30) nach einem einzigen bei St. Vaast de la Hougue (an der Küste der Normandie) gefundenen Exemplare seine Gattung und Art *Rhabdomoligus ruber* aufgestellt und unvollständig beschrieben hat, ist diese rätselhafte winzige Holothurienform nicht mehr angetroffen worden. In der Literatur wurde sie als zweifelhafte Synaptidenart durch Semper, Lampert, Théel und mich weitergeführt, während Petit sie für ein abnormes oder jugendliches Exemplar von *Synapta inhaerens* erklären wollte. Jetzt aber stellt sich heraus, daß es sich in Wirklichkeit um eine sehr einfach gestaltete Art aus der Familie der Synaptidae handelt, für welche Keferstein ganz mit Recht eine neue Gattung gegründet hatte.

Die neue Fundstelle liegt in der Nähe der Südspitze von Helgoland auf dem sog. Polygordius-Grund. Die Tiere wurden daselbst in größerer Zahl erbeutet und mir von der biologischen Anstalt zusammen mit jungen Synapten zur Bestimmung überschickt. Die Art ist also nicht pelagisch (was auch schon Keferstein für unwahrscheinlich hielt), sondern lebt auf dem Boden.

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Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: [Zoologischer Anzeiger](#)

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