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NOTES ON THE SNAILS OF NORTH-EAST TANGANYIKA TERRITORY

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DURING 1949 the writer made a collection of dry and spirit material from N.E. Tanganyika. Much of this is at present being identified and a general ecological account is to be published elsewhere. Certain information of a purely systematic nature which seems to be new and of interest will be published as a series of short papers.

1. *Gonaxis craveni* (Sm.) (Streptaxidae)

This species was first described by E. A. Smith (1880), and there is a description and excellent figure of the shell in *Proc. Zool. Soc.*, 15 February 1881, p. 280, pl. xxxii, f. 5 and 5*a*.

This large species is a characteristic and fairly common element in the fauna of the Amani Evergreen Rain Forest, situated at 3,000 feet in the E. Usambara Mountains. It has been collected at several places in this forest, and shells have been found on Mt. Tongwe nearer to the coast. The shell is very shiny with irregular but usually fine growth lines and sometimes very fine lines at right-angles to them. There are short strong striae just below the suture which is puckered. Young shells are quite regular and helicoid and show a very close resemblance to the helicoid streptaxids, shells of which are so common at the lower levels in dry forest. The body appears to be a pale livid flesh pink when seen through the shell, or through the upper whorls may have a greyish tinge. When protruded, however, the animal is seen to be whitish with pink granulated corrugations down the back. There is a brighter dorsal line of pink-red on the tentacles. The shell is very variable in size but all the specimens seen (about 100) undoubtedly belong to the same species. Shells as small as 21 mm. long and 20 mm. broad are not uncommon. The species becomes active in the early evening but was not observed to feed.

The radula exhibits features of great interest. It is 23·5 mm. long and 1·9 mm. broad. It consists of a rachis and two pleurae somewhat similar to taenioglossate radulae (fig. 1). The central tooth is absent or represented by a minute point. The rachis bears teeth which are small in its centre and gradually enlarge outwards, the last tooth being very large. The side "flaps" carry extremely small teeth, the difference in size being remarkably sudden. Each half transverse row has six teeth on the rachis and about 18 on the pleura. These pleural teeth are easily mistaken for a membrane during the mounting process and are easily torn off. The average number of transverse rows is 42. Judging by the staining properties of the radula, enamel is laid down with great rapidity. Only the first nascent row stains well in acid dyes (Chlorazol Black E was employed), the second row staining but little. The next four rows are yellow in the natural unstained radula and the rest colourless.

The resemblance of this radula to that of *Natalina caffra* (Fér.) is remarkable. An excellent figure of this radula is given by Connolly, being the work of A. J. Peile. H. Watson, Esq., who has very kindly commented

on a drawing of the *Gonaxis* radula states that he was not aware that such a radula existed in *Gonaxis*, and that it is a striking example of parallel evolution. He also suggested it might be abnormal, but it has been confirmed by dissecting other specimens. He points out that true *Natalinae* always have a central tooth and such a very different shell so as to preclude any real relationship. Bequaert and Clench (1936) include the present species in the subgenus *Macrogonaxis* Thiele with which they unite *Afristreptaxis* Thiele. The type of this subgenus also occurs at Amani, namely *G. enneoides* Mts. A single living specimen of this or a very closely related species was collected but it has not yet been examined. I have only been able to compare the radula of *G. craveni* with that of *G. ordinarius* (Sm.). That of the latter completely lacks the small pleural teeth and has teeth much more similar to those of *Edentulina affinis* Bttgr. It would appear that the two *Gonaxis* species are generically quite separate. It is unfortunate that only one small juvenile regular helicoid Strepataxid was found alive and its radula, to be described in a later note, bears some resemblance to that of *G. craveni*, but very few small teeth are present to the outer side of the large marginal one. A central tooth is very definitely present and this is very interesting in view of Pilsbry's remark: "The umbilicate, regular, helicoid Streptaxinae appear to form several genera . . . Several species referred to *Rhytida* by Thiele (1911) belong here. They are surely not Rhytidae, the texture and finish of the peristome are streptaxid characters." The presence of a central tooth indicates that this is either a character of no importance or that perhaps Thiele was in some measure correct. Only the study of further living material will resolve the problem.

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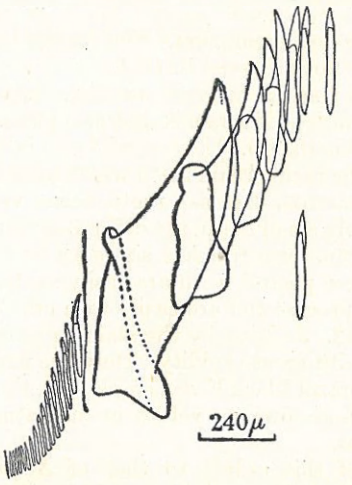

Half of a transverse row of teeth from the radula of *Gonaxis craveni* Smith. Amani, E. Usambara Mountains.