

LETTERS TO THE EDITORS

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Terrestrial Nemertines and Planarians in Britain

In September 1943 I made a search for terrestrial planarians in the woods around the Yealm Estuary, South Devon. While doing so, a number of interesting organisms were brought to light.

(1) A terrestrial nemertine was found in the damper woods under fallen branches and later under stones and wood in damp situations in more open ground. It was commonly in company with the triclad *Rhynchodemus terrestris* and in places was numerous. It was found in widely separated places on both sides of the Estuary. The characters of this nemertine agree with those of *Geonemertes dendyi* Dakin.

The specimens were 5–15 mm. long and in general were of a yellowish colour with two brown longitudinal stripes on each side of the rhynchocoel. But the colour varied from almost white to orange, dark brown or even a purplish pink. The specimens possessed the arrangement of the eyes characteristic of the species, that is, two anterior groups of 4–6 eyes and two posterior groups of 3–5 eyes. The internal characters agree with those given by Hett¹ and Stammer². Details of these will be published later. The only difference to be noted was in the number of proboscis nerves. Stammer gave the characteristic number of these as 14–15. Waterston and Quick³ describe specimens with 13 proboscis nerves while my specimens commonly have 13 nerves, but sometimes 12 and in one case 11. In all the species of this genus, however, the number of proboscis nerves is variable, and in the two species closely related to *G. dendyi* their number is greater than 14. Of the many interesting anatomical features presented by these worms, the most outstanding is the nephridial system. The existence of this was mentioned by Stammer, but has not been described by him or by others. In my specimens the nephridial system shows the same peculiar characters as those in related species of the genus such as *G. hillii* Hett⁴. There are numerous small protonephridia immediately beneath the weakly muscular body wall. From each group of these a thin-walled duct leads to a long, coiled, glandular canal the cells of which have a very marked radial striation. This canal leads in turn to a duct opening to the exterior. These openings are very numerous. The glandular canals of my specimens are highly developed. They occupy well-defined lacunae in the parenchyma and form conspicuous objects immediately beneath the muscle layer, particularly above and below the lateral nerve cords. The specimens that have been sectioned all proved to be females, but many were fertile and laid eggs which developed into young in about three weeks.

G. dendyi has been recorded three times. It was first described by Dakin⁵ from a single specimen from Western Australia. Since in addition those species most closely related to it are confined to Australia, it is probable that the species is itself of Australian origin. Its subsequent history is remarkable. It was next found by Stammer in 1934 in greenhouses in Breslau. In 1937, it was recorded by Waterston and Quick in wild country near Swansea in Wales. It is now found apparently

well established at places scattered round the Yealm Estuary in Devon. The possibility that it has been introduced into the northern hemisphere with some Western Australian plant suggests itself. An account of this organism will be published later.

(2) In company with *Rhynchodemus terrestris* were found at widely separated places round the Yealm Estuary a very few specimens of a *Rhynchodemus* clearly different from any recorded British species. It was some 6–10 mm. in length, of a brownish grey colour with two longitudinal purple brown stripes. Near the anterior end were two highly developed eyes with large lenses. The pointed snout is commonly carried a little upturned, giving the animal a somewhat ludicrous appearance of disdain. The organism is frail, and identification must await the collection of further specimens. In external characters, however, it agrees with Leidy's⁶ description of the American species *Rhynchodemus sylvaticus* Leidy.

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¹ Hett, M. L., *Proc. Zool. Soc., Lond.*, 937 (1927).

² Stammer, H. J., *Zool. Anz.*, 106, 305 (1934).

³ Waterston, A. R., and Quick, H. E., *Proc. Roy. Soc. Edin.*, 57, 379 (1937).

⁴ Hett, M. L., *Proc. Zool. Soc., Lond.*, 775 (1924).

⁵ Dakin, W. J., *Proc. Zool. Soc. Lond.*, 557 (1915).

⁶ Leidy, J., *Proc. Acad. Philadelphia*, 5, 289 (1851).

Birds and Butterflies

DURING a month's leave in the Anamalai Hills, Cochin State, South India, I have been studying the question of attacks by birds on butterflies. Both place and season (February–March) were well suited to such a study. The hills are covered by rain-forest, holding a rich fauna of insectivorous birds; and when I was there, shortly before the rains, some forty species of butterflies were on the wing, and some of these were common to abundance.

Take first the question of birds attacking butterflies in flight. Of insectivorous birds which take their insect-prey upon the wing, there were present: the large racket-tailed drongo, bronzed drongo, wood shrike, paradise flycatcher (*Tchitreia*), several small flycatchers, broad-billed roller, chestnut-headed bee-eater (*M. leschenaulti*), spine-tailed swift, and the common Indian swift. I watched all these regularly, in the open glades, clearings and pathways which were the favourite haunts of butterflies; and I paid particular attention to the drongos, as being large, strong-flying birds, and a conspicuous feature in the jungle. *I did not see a single bird, of any species, catch or chase a butterfly.*

Two aspects of the question seem to me to have been all too little attended to. The first of these is the *time factor*. Jungle birds, like so many others, have their two main times of feeding and activity—early morning and late afternoon. While I was in the jungle, they started feeding about half-past seven and became idle about 10 a.m.; and then got to work again from about 4.30 p.m. until dusk. But the busy time for the butterflies was just the opposite; they were mostly on the wing in the middle of the day, from about 11 o'clock until four. Moreover, the butterflies seldom flew much higher than four