

more shocks being necessary to activate the motoneurons. After D.D.T. treatment, however, one single stimulus, even a weak one, induces a high contralateral contraction. This phenomenon was studied in a wide variety of experiments, with different kinds of stimulation. These experiments show that the specific cause of D.D.T. symptoms is a facilitation of synaptic transmission. The question arises whether this fact can explain the cause of death after D.D.T. poisoning.

The answer is given by the same kind of experiments, carried out at a later stage of poisoning. The preparations then fail to give any contralateral response, even after faradic stimulation, while stimulation of the peripheral stump of the sciatic nerve (of the same animal) causes a normal reaction. Thus, a period of synaptic facilitation is followed by a synaptic block. This synaptic inhibition is, of course, not restricted to the sciatic region of the spinal cord, but represents a general blocking action of D.D.T., which causes the death of the animal.

The production of central inhibition could also be recorded with *Periplaneta*, although it takes a longer time to become perceptible. Besides the action of D.D.T. on the central nervous system, there is evidence of a specific action on the myoneural junctions or on the muscles of the leg of the cockroach. This will be discussed elsewhere.

On the other hand, D.D.T. had no specific action on the sense organs of the leg of *Periplaneta* or *Rana* (either skin-receptors and proprio-receptors), or on the peripheral nerves, or on the electro-encephalogram of *Rana*.

Experiments to detect any action of D.D.T. on the spontaneous activity of the nerve cord of *Periplaneta* are in progress, although the facts mentioned above make the existence of such an action improbable.

These investigations were carried out under the auspices of the National Council for Agricultural Research (Toegepast Natuurwetenschappelijk Onderzoek). Details of the work will be published elsewhere.

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Occurrence of *Acanthocephalus ranæ* Schrank. in Great Britain

Acanthocephalus ranæ Schrank. (= *Echinorhynchus ranæ* Schrank. = *Echinorhynchus hæruca* Rudolphi.), the only known Acanthocephalan parasite of the frog, has rarely been found in Great Britain. The only known recorded occurrences are by Elmhirst¹, who found it in the common frog *Rana t. temporaria*, and Baylis², who records its occurrence from Westmorland in a 'newt' and in the common toad.

Twenty-seven specimens were discovered in the duodenum of a single frog (*Rana t. temporaria*) during a routine dissection in November 1947. Unfortunately, frogs from two localities were mixed before examination, and the infected frog may have come from either Carnki (Cornwall) or from Newdigate (Surrey). Nineteen of the individuals were measured while still alive, and were found to consist of both males and females; males 7.0–10.0 mm., females 17.0–35.0 mm. Of the nineteen individuals determined, seven were males and twelve females. Mature eggs were present in all the females examined, and were

extruded from one specimen on removal to saline. None of the males had the bursa copulatrix extruded, and all were hanging free in the lumen of the duodenum when discovered.

In the few individuals examined, the number of proboscis hooks and longitudinal hook-rows corresponded with the results of Lühe (*vide Meyer*³) for German specimens—females having 18 longitudinal rows and the males 13 longitudinal rows, with four to six hooks in each row—rather than with the figures given by Van Cleave and Porta (*vide Meyer*³). Van Cleave found in four individuals examined 12 longitudinal rows with six to seven hooks in each row, and this appears to agree with Porta's figures⁴.

Although the recorded instances of the occurrence of this parasite seem to be rare, this may be due to lack of observation. In Germany and Austria the parasite is common in newts, toads and salamanders, as well as in the common frog. Heavy infections in *Rana t. temporaria* L. (as much as 50 per cent) occur in Germany³; but it appears to be much less common in France and Italy. It has been recorded only once in North America (Van Cleave⁴) from *Diemyctylus viridescens* at Baltimore, Maryland. Van Cleave considered the parasite to be rare in North America, as subsequent examination of Amphibia failed to reveal further specimens. This rarity is possibly correlated with the absence of the secondary host *Asellus aquaticus* L., which though common throughout Europe has been recorded in America only in Labrador and at Hopedale⁵. *A. ranæ* was recorded from the Dnjepir by Kostylew (*vide Meyer*³), in 1926.

It is hoped that further research and more careful observation of British Amphibia will throw more light on the distribution of this interesting species.

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¹ Elmhirst, R., *Glasgow Naturalist*, 4, 89 (1912).

² Baylis, H. A., *Ann. and Mag. Nat. Hist.*, (11), 4, 497 (1939).

³ Meyer, A., "Bronn's Klassen und Ordnungen des Tierreichs", 4, Abt. 2, 145 and 283 (1933).

⁴ Van Cleave, H. J., *J. Parasitol.*, 1, 175 (1915).

⁵ Richardson, H., *Bull. U.S. Nat. Mus.*, No. 54 (1905).

Colpomenia sinuosa (Mert.) Derb. et Sol. in Scotland

I WISH to record the finding of *Colpomenia sinuosa* (Mert.) Derb. et Sol., near Stornoway in the Isle of Lewis. The plants were found growing in shallow pools on *Corallina officinalis* L. at Aignish, on the Broad Bay side of the Eye Peninsula in July 1947.

The first record of this alga in Scottish waters was made by Dr. M. D. Dunn¹, who found it at St. Andrews in the summer of 1938. As it is now known to occur all round the Irish coast², these two Scottish records show that it may also be found elsewhere on the coast of Scotland.

I would be pleased to hear of any other Scottish stations for this alga, so that its distribution in Scotland may be known.

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¹ Dunn, M. D., *Trans. and Proc. Bot. Soc. Edin.*, 22 iv (1939)

² Brennan, A. T., *Irish Nat. J.*, 8 (1945). Blackler, M. C. H., *Irish Nat. J.*, 6, No. 8 (1937); 7, Nos. 7 and 8 (1939). Lynn, M. J., *Irish Nat. J.*, 5, No. 2 (1935). Rees, K., *J. Ecol.*, 23, No. 1 (1935).