# Letters to the Editor

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NOTES ON POINTS IN SOME OF THIS WEEK'S LETTERS APPEAR ON P. 647.

CORRESPONDENTS ARE INVITED TO ATTACH SIMILAR SUMMARIES TO THEIR COMMUNICATIONS.

## 'Autogenous' Strains of '*Culex pipiens*' (Diptera, Culicidæ)

IN a letter published in NATURE of January 5, 1935 (**135**, 34), we directed attention to the discovery, at Hayling Island (Hampshire), of a 'strain' of the mosquito *Culex pipiens* exhibiting certain abnormal characteristics (notably the ability of the females to lay fertile eggs upon a blood-free diet) which Roubaud has designated by the adjective 'autogenous'. Such autogenous strains of *C. pipiens* had previously been recorded only from France[1], Germany[2], Greece[3], Hungary[3] and Malta[3]. Roubaud, who considered his autogenous strain and the ordinary ('anautogenous') strain to be morphologically identical[4], indicated their biological differences by naming them respectively *Culex pipiens autogenicus* and *Culex pipiens pipiens*[5].

We find that, in three different stages of development, the Hayling autogenous strain of *C. pipiens* can be morphologically distinguished from the anautogenous strain. The adults are recognisable by the lighter colour of the thorax, by the greater average number of hairs on the lobes of the 9th tergite, and by the shortness of the male palps; the larvæ, by their much lower siphonal index and by the greater average number of branches in the siphonal tufts; and the eggs, by their greater width relatively to their length. The female adults (as already noted in the case of other autogenous strains) also differ from the anautogenous ones by reason of the fierceness with which they attack human beings.

Our investigations prior to March 8 last are fully described in an article about to appear in *Parasitology* (**27**, No. 4), the editor of which journal, Prof. D. Keilin, has very kindly given us permission to refer in this letter to the two subsequent developments summarised below.

(1) In our *Parasitology* article we allude to the (hitherto unexplained) fact that females of *C. pipiens*, although regarded in England as being chiefly 'bird-biters', occasionally exhibit 'man-biting' proclivities in residential districts. We have made the suggestion (supported by evidence provided by the examination of man-biting adults captured in a London hotel in the year 1930) that, in all such cases, an autogenous strain of *C. pipiens* has been concerned. Opportunities of confirming the validity of this assumption have recently been furnished by infestations of man-biting *C. pipiens* in (*a*) a block of flats in Westminster and (*b*) a row of cottages in Hull. Both from a blood-filled female (caught in a bedroom) in the first case, and from larvæ collected near the infested buildings (by kindness of the Medical Officer of Health for Hull, Dr. Gebbie) in the second case, we have established, and are maintaining, an autogenous strain.

(2) We are now rearing autogenous strains derived from Hayling, London, Hull, France and Greece—the last two by kindness of Prof. Roubaud and Dr. P. Tate respectively. We are indebted to Dr. Tate also for larval and adult specimens of the Hungarian and Maltese strains. We find that all these strains resemble one another, but differ from the anautogenous *C. pipiens* in the following respects. In the larvæ, the siphonal index lies between 3·8 and 4·3; in adults of both sexes, the thorax is light-coloured; in male adults, the first division of the mesosome is unusually broad and the combined length of the first four segments of the palp does not exceed the overall length of the proboscis; in female adults, the venter is, both medianly and laterally, devoid of dark scales.

In regard, however, to the chætotaxy of the larval siphon and of the 9th tergites, the seven strains differ noticeably from one another. In the Hungarian strain, for example, the 'tuft-branch' count is low and the 'tergite-hairs' count high; in the Hayling strain, both counts are high; and in the London strain, they are both low. A remarkable characteristic of the Greek strain is the large proportion of larvæ (about 40 per cent) which have three siphonal tufts instead of four.

It appears, therefore, that Roubaud's original (French) *C. pipiens autogenicus* is but one of a number of autogenous strains, all of which differ very markedly from the anautogenous *C. pipiens*, and also—to a lesser but quite obvious extent—from one another. In view of this fact we submit the suggestion that some specific name other than *pipiens* should be adopted to designate both the present and later-discovered members of this autogenous, short-siphoned, short-palped group: varietal names (preferably of geographic import) being appended whenever the recognition of definite morphological or biological differences renders such action desirable. In favour of reviving the specific name *domesticus*, Germar, for this purpose there is a great deal to be said.

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[1] Roubaud, E., *C.R. Acad. Sci.*, **188**, 735; 1929.
[2] MacGregor, M. E., *Trans. Roy. Soc. Trop. Med. and Hyg.*, **26**, 307; 1932.
[3] Tate, P., and Vincent, M., *Parasitology*, **28**, 512; 1934.
[4] Roubaud, E., and Toumanoff, C., *Bull. Soc. Path. exot.*, **23**, 196; 1930.
[5] Roubaud, E., *Ann. Sci. nat.* (10), **16**, 5; 1933.