

Letters to the Editor.

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The 'Forbidden' Line of Mercury at $\lambda 2270$ in Absorption.

IN a letter to NATURE of May 28, p. 778, I stated that the line $\lambda 2270$ which is 'forbidden' by the selection principle for inner quantum numbers, could not be observed in absorption. I have now repeated the attempt with a more powerful instrument, which has been placed at my disposal by a grant from the Council of the Royal Society. A definite positive result has been obtained, the line showing up clearly in absorption by a column of mercury vapour 45 cm. long boiling at a pressure of 95 cm. It is well seen on several different negatives. The range of conditions for observing it is very limited. Too much vapour blots out the continuous background; too little fails to show the line absorption.

The observation seems of considerable theoretical interest, as showing that direct transition from the normal to the metastable excited state of the mercury atom can sometimes occur, even though very rarely. The resonance line of mercury, $\lambda 2537$, would, I believe, show up in comparable intensity with the same column of mercury vapour at the atmospheric temperature; thus at about one millionth of the density used for $\lambda 2270$.

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Terling Place, Chelmsford,
Aug. 10.

Prof. Labbé's Copepod 'Allomorphs.'

PROF. LABBÉ, in the succession of papers in which he has expounded his theory of allelogenesis, claims to have established as a fact that, in the salines of Croisic and in the aquaria of his laboratory, an evolution of Copepoda has been observed, leading through a series of eight stages from *Canthocamptus* to *Cyclops*. According to his theory, the eggs laid by one species of Harpacticid may produce 'allomorphs' which, according to accepted standards of classification, would be considered to represent distinct genera or even families. If such were indeed the case, and it were possible in seven years to observe the transformation of *Canthocamptus* into *Cyclops*, it would indeed be necessary for systematists to abandon their task in despair.

Those who are not specially conversant with the detailed systematics of the Copepoda will appreciate the position more clearly if it were stated in terms of a more familiar group. One may, I think, quite fairly say that it would be much less surprising if the egg of a sparrow were to produce a robin, and the robin's egg a swallow, than if the eggs of a *Canthocamptus* gave rise to *Wolterstorffia* and those of the latter to Copepods having the characters ascribed to *Ferroniera*. Such revolutionary results are obviously unacceptable, and should not even be considered, unless supported by the most scrupulously exact descriptions and experimental evidence. Prof. Labbé in his most recent paper (*Arch. Zool. Exp. et Gen.*, 66, pp. 135-290; 1927) states (p. 246), "Nous avons maintenant une sériation complète de stades qui donne la preuve de l'arbre généalogique. C'est cette preuve qu'apporte le présent travail," so that

we may suppose that he has now offered all the evidence which he is prepared to give. I have already (NATURE, Sept. 4, 1926) given some reasons why such evidence as he has previously offered is insufficient, and it is only necessary to consider that which is now brought forward.

First, with regard to the descriptions of the 'species' with which Prof. Labbé deals. A detailed discussion of each of these would be a long and tedious business and, for reasons which I shall give, it is scarcely practicable or necessary, but one or two cases must suffice.

Prof. Labbé does not appear to have availed himself of the most indispensable systematic work on Copepods, Prof. Sars's "Crustacea of Norway." Had he done so he would scarcely have redescribed *Metis ignea* Philippi under the new name of *Parametis sanguinea*. That the two are identical there can be no doubt, and a comparison of his figures with those of Sars will give some gauge of the accuracy of Labbé's figures in general.

The original parent form of the experimental cultures from which were derived in "huit étapes successives" *Wolterstorffia croisicensis*, *Ferroniera mirabilis*, *F. cyclopoides*, *Regis servus*, *Herouardia paradoxus*, *Cyclops phaleroides* and *C. serrulatoides*, is called *Canthocamptus salinus*. This is the species named in previous papers *C. minutus* O. F. M., but Labbé has recognised that the original identification was unfounded (p. 209). A short description and some figures of this parent form are given which require comment. In the first place, the 1st antenna of the female is stated to be of seven "très courtes" joints, but it is figured (Fig. 41) as of seven unusually long joints, the fifth of which bears an æsthete. It may safely be said that this is not the antenna of a *Canthocamptus*, and indeed I am not aware of any genus or family of Copepod to which it could possibly be referred. Secondly, the first leg of the male and female are shown entirely unlike, and in neither case with an inner seta on the 2nd joint of the exopod. I do not know of any Harpacticid showing such an extraordinary sexual difference, and, if the figures are correct, it is quite clear that the animal is not a *Canthocamptus*, and that two species have been confounded in one description. What these may have been it is impossible to suggest. There is reason also to suppose that the same error, namely, that of giving figures and drawing up descriptions from different species and uniting them under one name, has given rise to others of the remarkable forms here dealt with. It would not be difficult to produce some very striking new creatures by such combinations!

If Fig. 103 of the 2nd antenna of *Ferroniera cyclopoides* male be compared with Fig. 117 of the same appendage of *Rhynchoceras rota*, a strong suspicion is aroused that in this case the same male has been attached to both species. The appendage as figured is so extraordinary that it could scarcely be identical in two species of different genera. The sexual difference in this appendage is, so far as I know, a new discovery by Prof. Labbé.

It is possible, in some cases, to suggest or to affirm the identity of some of these new species with others already known, but it is not worth while discussing them all in detail:

(1) The genus *Portierella* is very extraordinary, and the two species of it in some respects so unlike that they cannot possibly be congeneric if the figures are correct. It seems probable that there is a mixture here too, and that some species of *Tisbe* forms part of it.

(2) *Rhynchoceras rota* may, in part, be *Tachidius*