

The above are a few selected facts of interest, but the book will be found interesting even in a country where the orange is not commercially grown, and invaluable where citrus fruits are a staple industry.

CECIL H. HOOPER.

*Lessons in Elementary Physiology.* By Dr. T. H. Huxley. Enlarged and revised edition. Pp. xxiv + 604. (London: Macmillan and Co., Ltd., 1915.) Price 4s. 6d.

PROF. HUXLEY'S "Physiology" was a masterpiece; it first appeared in 1866, and since that date has been easily first among a crowd of elementary manuals. The edition which appeared before the present one was issued in 1900, and was then edited by Sir Michael Foster and Dr. Shore. It has been frequently reprinted since that date, but after a lapse of fifteen years the publishers have very rightly judged that it required revision in order to incorporate the new facts and generalisations which have been discovered in the meantime. This work has been entrusted to Mr. Joseph Barcroft, of Cambridge, and he has fulfilled his task with ability, tact, and, one may add, reverence. Although the repair has been substantial, one cannot but be struck with the fact how much of the fabric is left intact. There could be no better testimony to the thoroughness and permanence of the labours of the original builders. The main principles of physiological science remain for the most part unchanged. With some notable exceptions, recent physiological progress has been concerned with details, which are interesting enough to the researchers, but are really not essential from the elementary student's point of view. We wish the present edition every success and a continuance of usefulness.

W. D. H.

#### LETTERS TO THE EDITOR.

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#### Remarkable Nest of "Vespa norwegica," and Fertility of Workers of this Species.

THE following observations on a colony of *Vespa norwegica* are perhaps deserving of record. About the middle of July a relative living at East Liss, Hants, endeavoured to take for me a nest of this tree-wasp, but was forced to beat a retreat after merely bending the branch of the rhododendron to which the nest was attached. The effect of this bend was to throw the nest permanently out of its original position, and to incline the combs within it at a considerable angle to the horizontal plane in which they had, as always, been built. On July 28 the nest was successfully captured, and forwarded to me, together with such of its inmates as happened to be at home at the moment of capture. The combs were five in number; the three upper were each of about four inches in diameter; the fourth smaller and of irregular shape, there being a patch of small, misshapen cells placed obliquely on one margin. The position of the fifth

comb was very remarkable; it was attached, not to the fourth, but to the third comb; and, moreover, instead of hanging parallel to the other combs, it was set at a decided angle to them, the angle being such that it lay in the true horizontal plane, from which the others had been displaced. It is thus evident that the worker wasps are able to discriminate between oblique and horizontal positions with some nicety. This fifth comb had obviously been built since the disturbance of the nest; it consisted of but twenty-five small, though regularly hexagonal cells, and it is probable that the patch of irregular cells added to the edge of the fourth comb was of similar date, and represents an attempt to regain the horizontal plane for that comb. The queen had also been affected by the disturbance of the nest, for she had laid two, and frequently three, eggs in many of the cells of the second and third combs, instead of the normal one egg only. There were no eggs in any of the cells of the oddly-placed fifth comb, nor in the patch of irregular cells on the edge of the fourth. The absence of eggs from these cells points to all workers being sterile up to the time when the nest was taken. Within the nest as I received it were several dozen drones, two workers, and the queen; the majority of the workers must have been afield when the nest was removed.

On August 24 I visited the bush whence the nest was obtained, and found that the workers had continued operations, although bereft of their queen. On the ground immediately beneath the place of the original nest they had built an irregular mass of wasp-paper round some dead twigs of heather, and in the midst of this mass, smothered in the wasp-paper wrappings, was a very small comb consisting of six badly-shaped cells, of which two contained eggs that had failed to develop and had shrivelled. But fastened to a branch about a foot above this mass was a small nest of normal shape, and of about two and a half inches diameter, such as might be expected in early summer. Worker wasps were visiting both these structures, and occasionally one would emerge from the nest and proceed direct to the mass upon the ground, or *vice versa*; both were clearly the work of the one colony. I caught all the wasps—only thirty-seven in number—and found them to be workers without exception. Inside the suspended nest was one small, but perfectly regular comb composed of forty-four cells, thirty-three of which contained larvæ of various sizes. None of these larvæ looked healthy or well nourished, and three of the largest were dead and had turned pink. There was no queen in the nest; hence it is certain that at least one of the workers must have become parthenogenetically fertile.

It is probably not unusual for workers to become fertile in strong colonies towards the end of a favourable season; but I am not aware that such clear proof of worker fertility has hitherto been obtained, and it is certainly singular that reproductive powers should arise in the circumstances above narrated.

OSWALD H. LATTER.

Charterhouse, Godalming, September 7.

#### An Original Representation of the Giraffe.

AMONG the interesting reproductions of early figures that Prof. Eastman has lately presented to the readers of NATURE are two of the giraffe—one (NATURE, February 18) from Ehrenberg's memoir published in 1834, and the other (July 29) from a manuscript in the British Museum. Both these figures are attributed to Thebes; the former, from a "monument," is shown with a monkey-like animal on the back of its neck, and the latter, from a "tomb," has the monkey in