this time!), an irresistible group of nestlings of the Canada jay, and a trio of manatees depicting three leading attitudes, make up a selection which is altogether admirable, and if for only these the book deserves support. On the contrary, however, illustrations such as those which do duty for a transverse section of a Hydra, for a tactile papilla and that of the calf's tongue, are beneath criticism; and doubtful to a degree are the incorporation in such a book as this, as all-typical, of such forms as Gonium, Calcolynthus, and Prophysema, about the latter two of which the less that is put before the elementary student the better. Old friends are with us, as, for example, the puss moth larva, with its "intensely exaggerated caricature of a vertebrate face." Anthropomorphic truly; but is this science?

We assume the authors would have the beginner read this book while prosecuting a more detailed study of individual forms, as with the now universal type-system. Its appearance within a year of Davenport's "Introduction to Zoology," a book of somewhat kindred aims, betokens a desire on the part of those responsible for the elementary scientific education of young America for a liberalising and humanising influence. The experiment is an interesting one, and it in some respects meets the ever-recurring question of the teacher, "What best can I give the student to read?" The lines on which the book is written appear to us risky in their great breadth and cursoriness; but while we await the result of experience before pronouncing further upon the book we admit that salient truths are expressed in a refreshingly familiar way, and that it is pleasant reading. The authors have fallen into the common error of according uneven recognition to authority, as, for example, in attributing the well-known series of drawings of Amœba to Schulze on p. 8, but not on p. 53, where at least a cross reference should have been inserted.

OUR BOOK SHELF.

Gustav Theodor Fechner. By W. Wundt. Pp. 92 (Leipzig: Engelmann, 1901.) Price 2*s.* net.

G. T. FECHNER, at once a distinguished and industrious devotee of exact research, and a poetic and religious enthusiast, is a most attractive figure in the history of German thought in the nineteenth century; and in the lecture delivered by Prof. Wundt before the Royal Society of Saxony in commemoration of the hundredth anniversary of his birth (April 19), the general reader will find a readable account of him which is composed with the double authority of a personal friend and colleague and of a successor.

The chief interest of the lecture itself lies in the proof that Fechner was first led to the psychophysical work by which he will be best remembered from a desire to find experimental confirmation for his poetico-philosophical theory of the universal animation and intelligence of physical nature.

Many readers will perhaps turn with most interest to the section of the appendix which contains the author's personal reminiscences of his famous predecessor. It is curious to learn from Prof. Wundt that Fechner's interest in the experimental psychology of which he was the originator was entirely confined to the problem of the so-called "logarithmic law" of psychophysical action, and that he could not be brought to read exact researches into other psychological questions. A. E. T.

LETTERS TO THE EDITOR.

[*The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts intended for this or any other part of* NATURE. *No notice is taken of anonymous communications.*]

Two Problems of Geometry.

IN your issue of August 22, Mr. A. B. Basset asks for solutions of the two problems, the trisection of an angle by means of the cissoid, and the duplication of the cube by the conchoid. I happened to come across a solution of the latter in an old book, Leslie's "Geometrical Analysis" (1821), where the problem is solved also in several other ways—by means of the cissoid, two parabolas, a rectangular hyperbola and circle, and the logarithmic curve. The problem of the trisection of an angle is also solved in several ways—by means of the conchoid (two ways), an hyperbola ($e = 2$) and intersecting circle, a rectangular hyperbola and circle, the quadratrix, the companion to the cycloid, and the Archimedean spiral, but *not* by the cissoid.

The problem of the duplication of the cube is solved in the following way by the conchoid.

Let AB, AC be the two given lines placed at right angles. Complete the rectangle AD and circumscribe a circle about it. Then if through C a line ECG be drawn cutting BD, BA produced in E and G and the circle again in H, and making EC = HG, it is known that AG and DE are the two mean proportionals between AC and AB. (Philo's construction.) Bisect BD at F, and on AB describe an isosceles triangle having BK = AK = BF. Join KG.

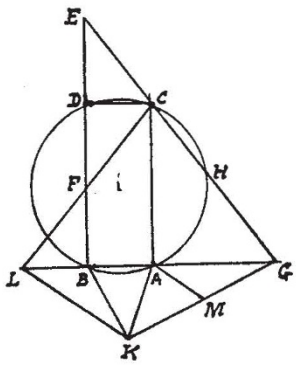

FIG. 1.

Then ED . EB = EC . EH = GH . GC = GA . GB,
$\therefore$ GA . GB + BF^2 = ED . EB + BF^2 = EF^2;
and GK^2 = AK^2 + GA . GB = EF^2, $\therefore$ GK = EF.

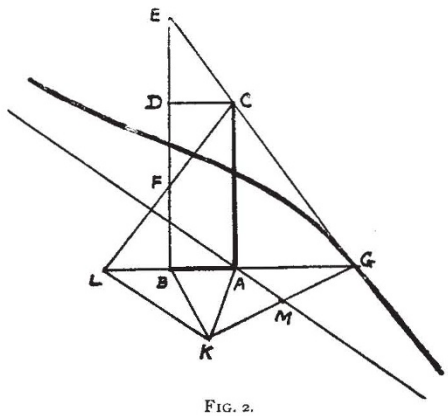

FIG. 2.

Join CF meeting AB produced in L, join LK and draw AM ∥ LK.

Then LA = 2AB, and ED : BA = CA : AG
$\therefore$ 2DE : AC = 2AB : AG = AL : AG
... AL : AG = DE : DF, $\therefore$ EF : DF = LG : AG
= GK : GM; but EF = GK, $\therefore$ GM = DF = $\frac{1}{2}$AC.