There is, therefore, no fear of the new Reptile House lacking inhabitants, when ready to receive them next year.

DIFFICULT CASES OF MIMICRY

I SEE a notice regarding mimicry and simulation, by Mr. A. R. Wallace, in *NATURE*, vol. xxvi. p. 86, and beg to forward the case of a caterpillar mimicking a shrew, as a peculiar instance of this curious law.

Here we see the insect unconsciously simulating the very animal that most likely feeds on itself, or at least an insectivorous mammal. Passing through a dense forest near a path, I suddenly came on the caterpillar, at about five feet from the ground, on a stout creeper, and of course mistook it for a shrew. Its remaining, and not running off, induced me to look closer, when I saw the green

markings, and at once secured the prize, and, after making a sketch or two, put it in my "hatching" cage; unfortunately, I could not find what it fed on, and after spinning a pale greenish cocoon, it died. The natives did not seem to know it. When moving along, it does so as other caterpillars, as seen in the outline 1, of which 2 is plan of the head. If suddenly disturbed, it at once strikes the peculiar pose, as seen in the sketches, and retains it for some time.

The general colour is a neutral to brown-grey, beautifully marked, and which I have not attempted to imitate; the general appearance is dark, except where the greenish-yellow spots occur. It is the first case I know where a caterpillar mimics a vertebrate animal. The cases are almost innumerable out here, where insects mimic each other and similar or different kinds, or leaves, seeds, flowers, sticks, pieces of grass or clay, &c., &c.; but we

Caterpillar that simulates a Shrew (full size).

see it also in many other cases, not always protective, though invaluable to the animal or the insect. The tiger has one call, when hunting, so like the loud whistle of the Sambar (deer) that only an expert and old resident can tell the difference. The deer, if within range, *run to it*, and I have myself shot a Sambar at twenty yards that dashed up on my whistling loudly, with a leaf; unfortunately, native shikaries are only too expert at this. Again, the eye and nose lumps of a crocodile are so like lumps of foam that I have often drifted past close to one in my *Rob Roy*, and only found it out by the lump of foam quietly and suddenly *sinking* below the surface of the muddy water. In the case of the tiger the simulation was by sound, to enable it to get food; in that of the crocodile the same end is gained by simulation of appearance, enabling the animal to drift close to prey without alarming it.

Asam, June 25

S. E. PEAL

THE WASHBURN CHRONOGRAPH

THE article on the Brussels Chronograph (*NATURE*, vol. xxvi. p. 107) induces me to send a brief description of the chronograph of this observatory, which may be taken as representing the form usually adopted by the best American makers, Alvan Clark and Sons, Fauth and Co., Stackpole and Brothers, &c. The accompanying engraving gives a good general idea of it. The scale may be obtained by remembering that the iron base plate is $21\frac{1}{2}$ inches by $11\frac{1}{2}$ inches. The barrel is 14 inches long by 7 inches in diameter. The paper used is $23\frac{1}{2}$ inches by 13 inches which provides for a lap at the line of junction. There is room for the observations of two hours and forty minutes. The weight employed is fifteen pounds, and usually a double pulley is used to diminish the fall.

The chronograph can be wound while it is going, with-