of the brick at the bottom is very much less than it would be if it fell from the wall under the influence of gravity. In lifting it down the man does work *against* gravity, and therefore the energy of position of the brick on top of the wall finds its equivalent (1) in the *vis viva* of the brick at the bottom, and (2) the mechanical value of the heat of oxidation of the man's muscles working against gravity. This last is of course the difference between the *vis viva* under gravity alone, and the actual *vis viva*. Hence the man wastes tissue *more*, digests *more* food, and radiates more heat than if he were at rest.

I beg to add a word upon the letter of "X." concerning the term potential energy. Used as the term is to denote energy of position, it cannot be considered "felicitous" or logically exact. Energy of position is *potential vis viva* (or kinetic energy); and *vis viva* (against a force) is *potential* energy of position. In the expression potential energy, we are led to inquire *which* energy. As it stands it properly implies the idea of possible *vis viva*, as if "energy" was used only to signify *vis viva* or kinetic energy. It may be noticed that Prof. Helmholtz uses *vis viva* for "energy" (the adjectives actual and latent being understood) in two places; viz., in his tract on "Conservation of Force," p. 128 of translation, "The *vis viva* of a single particle Am, &c.," and in "Popular Lectures," p. 196, trans., "The *vis viva* of motion of revolution round the sun, &c.," where the algebraic expression given shows that the *whole vis viva*, actual and latent, or, as it is now called, the *whole* energy, kinetic and potential, is meant. While then the German philosopher uses *vis viva* for work-power in general, the English writer in the terms potential and actual energy employs adjectives which logically require that energy should signify *only* work-power of motion. Out of this maze "X" suggests a way by proposing to use the term "energy of tension" for potential energy, with a reminiscence of Helmholtz's "Sum of the tensions;" but if we keep the expression kinetic energy, we require a corresponding *adjective* to distinguish the other form of energy, and what more expressive, more exact, more "felicitous" word could we find than "statical," the word originally employed by Sir W. Thomson? We have here a most appropriate word, supported by a great name, and I venture to suggest that "statical energy" should come into general use.

Arnesby Vicarage, Rugby W. P. O.

Dealers in Zoological Specimens and Models

HAVING had a considerable amount of trouble in ascertaining the addresses of the various dealers in zoological specimens in this country and abroad, I think it likely that I may be doing service to others who like myself are charged with the formation of an educational museum of zoology and comparative anatomy, if I give in the columns of NATURE a complete list of such dealers as I have found useful. They are as follows:—

1. For spirit specimens and dried parts of fish, molluscs, insects, corals, &c.—Cutter, Bloomsbury Street, London.
2. For skeletons, &c., Ed. Jerard, jun., College Place, Camden Town, London.
3. For Ceratodus, insects, &c.—Higgins, 22, Bloomsbury Street, London.
4. For molluscs, and various marine forms—R. Damon, Weymouth.
5. For American fish and amphibians—Prof. Henry Ward, Rochester, New York.
6. For skeletons of fish, &c., &c.—Erber, 7, Sigmundgasse, Vienna.
7. For skeletons and exotic specimens generally—Gustav Schneider, 67, Grenzackestrasse, Basel.
8. For exotic specimens generally—Museum Godeffroy, Hamburg.
9. For Mediterranean fish, molluscs, &c.—Gal, frères, 1, Maritime, Nice.
10. For glass models of invertebrates—Blaschka, 9, Schiesgasse, Dresden.
11. For wax models of anatomy of parasitic worms and of vertebrate anatomy and embryology—Weisker, 13, Thalstrasse, Leipzig.
12. For wax models of vertebrate and invertebrate embryology—Dr. Ziegler, Freiburg, Baden.
13. For live starfishes, Myaarenaria, Cyclopterus, and other forms—J. Thompson, 11, York Place, Southend, Essex.
14. For anemones, and channel marine fauna—R. T. Smith, 25, St. Alban's Street, Weymouth.

I trust that some of your correspondents will enlarge this list, and that such as it is it may be of use.

E. RAY LANKESTER

Ornithology of Costa Rica

IN NATURE, vol. xvi. p. 446, I see that you announce my return to this country. I take the liberty of rectifying two errors in the announcement:—1st. I was five months collecting in Costa Rica (not four months), from the end of December to the end of May. 2nd. I have brought home 250 species (not 200), and it may interest your readers to know that among these 250 species, besides the female of *Carpodectes nitidus*, are also some other very rare birds many of which—one or other of the sexes—are new to science. I add a list of some of them in case you may feel disposed to give it in your journal.

Odontophorus guttatus (Gould), *Dendrortyx leucophrys* (Gould), *Geotrygon costaricensis* (Lawr.), *Tonurus hoffmanni* (Cab.), *Tetragonops frantzii* (Sclat.), *Turdus nigrescens* (Cab.), *Turdus obsoletus* (Lawr.), *Catharus frantzii* (Cab.), *Catharus gracilirostris* (Salv.), *Dendraeca vieilloti* (Cass.), *Setophaga torquata* (Baird), *Phainoptila melanoxantha* (Salv.), male and female (just described by Mr. Salvin, from a single specimen, sex unknown, sent by Mr. Rogers), *Chlorophonia callophrys* (Cab.), *Pezopetes capitalis* (Cab.), *Pyrgisoma cabanisi* (Sclat. and Salv.), *Pyrgisoma leucotis* (Cab.), *Eugenes spectabilis* (Lawr.), both sexes, *Oreopyra hemileuca* (Salv.), *Oreopyra cinereicauda* (Lawr.), *Selasphorus flammula* (Salv.), both sexes, *Panterpe insignis* (Cab.), ditto, and several new species belonging to the families *Fringillidæ*, *Trochilidæ*, and *Tyranidæ*, of which I am preparing a description, as well as a general list of all the species collected by me (with notes on many of them), for publication in the *Proceedings* of the Zoological Society.

A. BOUCARD

55, Great Russell Street, W.C.

On the Supposed Influence of Light on Combustion

BEFORE Dr. Ingleby referred to my experiments as "inconclusive," his reference should at least have been accurate. He says that I "actually used a dark cubbard into which there was no free influx of atmospheric air." So far from this being the case, the "dark closet," as I call it in my paper, was the photometer-room of Price's Candle Company, an enclosure 12½ feet long, 3½ feet wide, and 6½ feet high, with arrangements for constant ventilation both at the bottom and at the top. So far from candles "naturally burning there with inferior combustion," as Dr. Ingleby supposes, it is in constant use for testing the burning of candles, and any deficiency in the supply of air would be shown quickly by the production of smoke, and yet after being so used for many hours there is not a trace of smoke in the air.

Dr. Ingleby's assumption that the candles burnt with inferior combustion in the closet is in direct opposition to the statement made in my paper. In the first and fourth trials there is a greater consumption in the light than in the dark; and in the second and third trials the consumption is greater in the dark than in the light; but in any case the difference is so small, amounting only to from two to seven grains per hour, that it may fairly be referred to slight differences in temperature, in currents of air, and in the composition and make of the candles—the *cæteris paribus* which Dr. Ingleby, with unnecessary emphasis, says I "left *entirely* out of the experiment."

The method adopted by me has the advantage of measuring the results by actual weighing, and I attach no importance to any opinion that is not founded on a similar basis. I cannot follow Dr. Ingleby's theory. What does "insidious eclipsing the waning glimmer of expiring embers," mean? I can understand that sea-coal—a caking coal—may form hard cakes, below which the fire burns out unless the cake is broken, an action which does not occur with non-caking coals such as a great part of the Staffordshire and Lancashire coals, but I cannot see why if the "last faint gleam is invisible" in consequence of a brighter light, therefore "the fire goes out as a matter of course." That the sun puts out the fire by rarefying the air necessary for combustion I take to be pure fiction.

In my experiments differences of temperature were slight. If there was any difference one would expect the temperature to be higher in the closet than in the open room, but in the fourth trial the temperature in the sunshine was the higher. If the candle