concerned, it remains a complete monument of scientific accuracy, and has suffered nothing in the time since it was erected. The strength of his arguments has not been in the least weakened, the accuracy of his experiments stands unassailed, and the justness of his conclusions is thus far incontrovertible. As matters stand to-day, we are bound to consider that the cause of tuberculosis is found, and that that cause is, or is contained in, the bacillus of Koch, to whom all honor is due for the beauty and completeness of his investigations upon this important subject.

IN our account of the last annual meeting of the National academy of sciences, reference was made to the gift of eight thousand dollars by the widow of the late Dr. J. Lawrence Smith, a member of the academy. The deed of trust has recently been executed, and provides that the interest of the fund shall be used in striking a gold medal of the value of two hundred dollars, to be called the 'Lawrence Smith medal,' and to be awarded by the academy, not oftener than once in two years, "to any person in the United States of America, or elsewhere, who shall make an original investigation of meteoric bodies, the results of which shall be made known to the public; such result being, in the opinion of the National academy of sciences, of sufficient importance and benefit to science to merit such recognition." The investigation for which the award is made, or its completed publication, must "have been made since the time of the last preceding award." Preference is given to a citizen of the United States, when the choice may lie between such a one and a foreigner. Any sums which may accumulate from the interest of the fund, above what is required for the purposes specified, is to be used "in aid of investigation of meteoric bodies, to be made and carried on by a citizen or citizens of the United States of America."

We recall but three other important honorary awards at the disposal of learned societies in this country, — the Magellanic, the Rumford, and the Walker, to mention them in the order of their foundation. The Magellanic, founded by John Hyacinth de Magellan, is an "oval plate of solid gold, of the value of ten guineas," which may be annually bestowed by the American philosophical society "to the author of the best discovery or most useful invention relating to navigation, astronomy, or natural philosophy (mere natural history only excepted);" but the discovery must be unpublished, and never before publicly rewarded. We are not aware that it has ever been bestowed. The Rumford, founded by Count Rumford, is a gold and silver medal, bestowed biennially by the American academy of arts and sciences for notable researches by an American in light or heat. The Walker, founded by the late Dr. William J. Walker of Boston, is a money-prize of from five hundred to a thousand dollars, given once in five years by the Boston society of natural history to an American for specially valuable investigations in some department of natural history. The addition to this meagre list is therefore most welcome. Through the excellent provision granting the power of using any surplus in the direction of research, the necessity of awarding the prize to claimants of insufficient merit is avoided, and the branch of investigation to which it applies is thereby doubly fostered: but we wish the requirement that the investigation which is crowned must have been made since the previous award, could be modified to a definite term of years; since, if two important investigations claimed the award, one would now be forever debarred.

LETTERS TO THE EDITOR.

**** Correspondents are requested to be as brief as possible. The writer's name is in all cases required as proof of good faith.*

The use and spelling of terms, and some facts in embryology.

IN *Science*, No. 73, a critic notices my recently published 'Contribution to the embryography of osseous fishes.' I reply as follows: Fault is found with my terms 'embryography,' 'yelk,' etc. I chose the word 'embryography,' not from a mere pedantic or eccentric whim, but because it was an expressive term, and covered what I meant in the general discussion, or *description*, of the development of a considerable

number of species. The word 'yelk' is spelled according to the most approved usage throughout my memoir, both Webster and Worcester agreeing in this; and I would commend to my critic's attention the remarks relating to this word to be found in the work of the latter authority, where both Johnson and Walker are also cited in favor of the same spelling.

The expression of opinion by my critic as to the relative value of previous literature is unfortunate. Hoffmann's paper on the teleostean egg was cited for the very good reason that it was undoubtedly the most thorough and consecutive upon its special subject, which had appeared up to that time, or even to the present. No American work can yet claim such a distinction.

The charge that I have 'padded' my paper with unnecessary quoted matter is unfair; for, out of one hundred and eighteen pages of text, nine are taken up with citations,—a proportion greatly exceeded in the papers of many competent authorities. And I ask my critic, in all fairness to me, if, by throwing out any one of the quoted passages, the paper as a whole would not lose in thoroughness and clearness of statement; for the object of my paper was to give a general statement of the facts relating to the development of fishes, so that it might be safely referred to, especially as to the early stages.

Whether my critic sees fit to accept my views upon the layer which I have termed the 'yelk-hypoblast,' is a matter of indifference to me. For his benefit, I may cite the names of the following masters in embryology, who agree with me more or less closely: Vogt, Kupffer, Hoffmann, Rauber, Gensch, Ziegler, and even, in one sense, His and Kölliker.

JOHN A. RYDER.

Smithsonian institution, Washington, D.C.,
June 30.

[Mr. Ryder will not find 'yelk' used by the leading embryologists, either in England or America; 'yolk' being the form used by Huxley, Balfour, Allen Thompson, Agassiz, etc. 'Embryology' is also similarly employed, instead of 'embryography.' In our notice, it was not said that either word was incorrect; but we meant exactly what was printed, that they are a 'little eccentric.' In regard to Hoffmann's paper, it is by no means 'the most thorough,' but contains important errors. We fail to see how the value of Hoffmann's paper is affected by American work being considered less good. We regard Mr. Ryder's own essay as much more valuable than Hoffmann's. As to the padding, we think the charge fair that the essay contains 'an unnecessary number of lengthy extracts *and abstracts:*' the latter Mr. Ryder ignores. It is generally understood that very little editorial supervision is exercised over most of our government publications: hence they are often diffusely written, and charged with much which might better be omitted. We do not think that Mr. Ryder intentionally put in matter to fill out; but we do think he failed to leave out much that he would have omitted if his article had been for a carefully edited scientific journal. As to the 'yelk-hypoblast,' the future will decide between our opinions.

Mr. Ryder is under a misapprehension, if he thinks our notice was intended to be unfavorable; for although we pointed out some blemishes, as we held them to be, we intended to convey the impression that the substance of the work appeared to us very meritorious: therefore we said that 'the work had been done with evident care and patience,' and mentioned a long series of observations which might be 'signalized as being of especial interest and importance.' — ED.]

A remarkable new type of mollusks.

A very remarkable new form of Mollusca has recently been submitted to me for examination by Mr. G. W. Tryon of Philadelphia, who received it from Mr. C. R. Orcutt of San Diego, Cal. It was collected near that place on a stony bottom, where other bivalves are found in their season, and which appears to be nearly dry at low water. Other specimens were received direct from Mr. Orcutt, who collected about fifty. This animal is a pelecypod or lamellibranch with an *internal shell.* Nothing of the sort, or in the least approaching it, has ever been described.

The animal, from the collector's drawings, is, when living, somewhat of the shape of a small globose Cypraea, of inflated ovoid form, translucent, jelly-like, dotted above with small, rounded papillae, which appear of an opaque white on the general translucent ground. When living, Mr. Orcutt states, it was over an inch in length. The specimens sent have been contracted by alcohol to less than half an inch in length. The mantle which covers the dome of the body is tough and thick: the sides are smooth, and nearly free from papillae. The superior median line is a little depressed. The basal part of the anterior end in life is prolonged beyond the general mass in a wide trough, with the convexity upward, and somewhat expanded at its anterior extremity. About one-third of the way from the anterior end, the mantle is perforated by an orifice, which pierces it in the vicinity of the mouth. The edges of this orifice project from the general surface, and it is lined with close-set, small papillae. At about the same distance from the posterior end is another tubular perforation, holding a similar relation to the anus; which has, however, plain edges, and is not internally papillose.

Turning the animal over, we find the anterior trough of the mantle prolonged backward, like a slit with plain edges, to about the posterior third; from this projects a narrow, hatchet-shaped foot, with a strongly marked byssus-gland at its posterior angle; from this a bunch of white byssus extends to the stone or other object to which this mollusk attaches itself. The cavity of the mantle extends some distance behind the commissure of the pedal opening. The anterior point of the foot is roofed by the trough-like expansion above mentioned. The mouth is provided with two pairs of small palpi. Two gills, very finely microscopically laminate, extend backward from near the mouth, on each side, to the posterior end of the body, the wider one being the inner: between their posterior ends a thin reticularly perforate veil connects the two pairs, and shuts off the anal area from the rest of the mantle cavity. The intestine contains a hyaline stylet, and is considerably convoluted; but the viscera offer no marked peculiarities when compared with ordinary pelecypods. The shells are enclosed in two little sacs in the substance of the mantle. The umbones are near together, apparently connected by a brown gristle resembling an abortive ligament, and are nearly over the heart. The valves are about ten millimetres long and one millimetre wide, destitute of epidermis, prismatic, or pearly layers. There are no muscular or pallial impressions, no adductors, hinge, or teeth. They resemble in form the exterior of Gervillia, as figured by Woodward, and are pure white. As they lie in the body, they diverge at a rather wide angle from the beaks, forward. The embryonic valves are retained like two tiny bubbles on the umbones.