the cartilage that is usually found below the seventh rib being fully developed into a rib." This description is somewhat ambiguous, but I presume it refers to the occasional elongation of the eighth costal cartilage in man, and its direct articulation with the sternum. At the time when I read this notice I was organizing a system of "collective investigation" in my class of practical anatomy, in Trinity College, Dublin, and I asked Mr. O. L. Robinson, one of my assistant demonstrators, to undertake the investigation of this point. During the last two months he has examined thirty subjects, and he has found the eighth costal cartilage united to the sternum in no less than five of these. In four subjects (two males and two females) the eighth cartilage of the right side alone showed this condition; in the remaining case (a male) the eighth cartilage on each side reached the breast-bone and articulated with its fellow in front of the upper part of the xiphi-sternum. The anomaly is therefore one of some frequency, seeing that it has been noted by Mr. Robinson in about 17 per cent. of the subjects which he has examined. I may mention that all the specimens are now in my possession.

But my object in making this communication is not so much to record the results obtained by Mr. Robinson, seeing that these will be more fully dealt with elsewhere, as to call attention to a remarkable statement which is made by NATURE on the authority of *Science*. It runs as follows:—"Dr. Lamb has made a thorough search of anatomical literature for references to this peculiarity. In the English books there is only a single incidental reference to it, and in that case the author does not say that he has ever seen a specimen. In German books there are two references, one of them being the one mentioned by the English authority." Certainly this is not my experience of the literature on this subject. There is hardly a German text-book of importance in which the anomaly is not referred to.¹ Thus Gegenbaur, Aebly, Luschka, and Henle, all mention it, and the two last enter into the question at some length. Henle likewise quotes the observations which have been made upon this point by Hyrtl and Prof. Oehl of Pavia. It is true that our own text-books are for the most part silent on the subject, but Prof. Humphry in his classical work on the human skeleton, p. 323, remarks: "In a specimen in the Cambridge Museum, which measures seven inches, there are eight cartilages of ribs separately united to the sternum." This is not the description of a man who has never seen such a specimen.

It is interesting to note that, of the ten cases recorded by Dr. Lamb, nine occurred in Negroes and one in an Indian. Luschka, referring to the assertion that the anomaly is more frequently observed in black races, says: "Im Verlaufe weiterer Nachforschungen hat es sich jedoch herausgestellt, dass bei den Negeren nicht häufiger als bei anderen Menschenstämmen und immerhin nur in Ausnahmefällen acht Rippenpaare an das Brustbein angeheftet sind" ("Die Anatomie der Brust," 1863, p. 119).

Another feature of interest in connection with this anomaly is centred in the fact that in the lower apes, and also in the chimpanzee, it is the typical condition. As a rule, they present eight true ribs on each side. The orang, however, resembles man in this respect, and normally possesses only seven true ribs. Curiously enough, the transition stage between man and the orang on the one hand, and the chimpanzee on the other, is to be found in the gibbon. In this ape, so far as my experience goes, the cartilage of the eighth rib, although it is long and rests by its tip against the xiphi-sternum, does not articulate with the sternum. A condition similar to this is occasionally seen in man.

D. J. CUNNINGHAM.

Trinity College, Dublin, January 2.

"The Cremation of the Dead."

IN your excellent article on the above subject (p. 219), it is stated that a provision contained in the will of a testator directing the cremation of his remains has no legal effect. This is no doubt correct, for, although the law permits a man to dispose of his property by will, it does not permit him to dispose of his own corpse.

This legal difficulty may, however, be surmounted by an indirect method. Most testators bequeath legacies to their executors, and also to their nearest relatives; and the legacies bequeathed

¹ It is not referred to by Krause, Hermann Meyer, or Pansch, but in these books, as in our English text-books, the omission is evidently due to want of space and not to want of knowledge.

to the latter are not unfrequently of considerable value, even when the testator is a man of only moderate means. If, therefore, each of the legacies are made conditional upon the legatee taking, or concurring in taking, the necessary steps to procure the cremation of the testator's remains, the wishes of the latter would in the majority of cases be carried into effect; since any attempt on the part of a legatee to interpose any obstacle would involve the forfeiture of his legacy.

A. B. BASSET.

Conservative Club, S.W., January 6.

"Degradation" of Energy.

IT may perhaps have occurred to others besides myself that the term "degradation"—as applied to the transmutation, for instance, of mechanical energy into heat energy—is a rather stronger one than our present knowledge warrants us in using: that it casts, in fact, an unmerited slur on the character of that eminently respectable concept, energy. We seem hardly justified in supposing that any *intrinsic* deterioration of the energy takes place in such transmutations as the above.

Might not "depreciation" be a rather preferable expression? This would imply nothing more than a lowering in the value of energy in relation to the particular needs and mere agencies of man, and not any absolute change in its character for the worse.

Similarly, money securities are said to be "depreciated" in a particular market, while they may not be at all lessened in absolute value.

H. G. MADAN.

Eton College.

Hares Swimming.

IN *Chatterbox* of May 12, 1879, published by Wells Gardner, Paternoster Buildings, is an account by J. G. Fennell of several instances in which he has seen hares swim across both fresh and salt waters.

OCTS. DEACON.

Loughton, Essex, January 5.

THE RECENT SOLAR ECLIPSE.

WITHIN the next few days we may expect detailed news of the various parties organized to observe the eclipse of January 1. In the meantime, the following telegram from Mr. Pickering, chief of the Harvard Eclipse Expedition, who was at Willow, California, will be read with interest:—

"The sky was clear during the whole of totality. The corona was larger and more irregularly shaped than usual, exhibiting great detail in its filaments. Three of the geometric contacts were observed. The duration of totality was 118 seconds, or three seconds longer than had been predicted.

"Capital drawings were obtained of the whole corona. Eight negatives were obtained with a 13-inch refracting telescope, and six with an 8-inch telescope, and seven photometric observations were made of the corona's light. The drawings show the corona extending outwards from the sun for two of its diameters—that is, 2,000,000 miles in both directions. The corona somewhat resembled that of the eclipse in July 1878."

Another account of the doings of Prof. Pickering's party states as follows:—

"During yesterday's eclipse of the sun twenty-five negatives were taken at Willow, California, to measure the brightness of the corona and its surroundings. Five of these were obtained to search for intra-Mercurial planets, and twenty to study the spectrum of the corona in order to determine its composition. These negatives will reach from the yellow rays to the extreme ultra-violet.

"The general illumination during the period of totality was found to be lighter than during the eclipses of 1878 and 1886. The corona was similar to those of 1868 and 1878, but showed much more detail than the latter, and was exceptionally fine, extending usually on one side to two solar diameters. A striking characteristic was two forked wings of light. The polar rays were well defined and con-