We frequently also used a small shrimp trawl, but it was quite ineffectual as far as *Amphioxus* was concerned.

Two species of *Amphioxus*, *Branchiostoma belcheri* and *B. cultellum*, occur in the Malay Seas; the latter is known from Moreton Bay, Torres Straits and Celebes, while *B. belcheri* has been hitherto recorded from Prince of Wales Islands, Torres Straits, Borneo and South Japan, so that either of these species might with equal probability have occurred at Singapore. There is little of interest to note with regard to the specimens themselves. Dr. Willey tells me that in the adult example the "oral cirri are remarkable for the great size of the sense-papillae which form long projecting conical processes."

In the young, both before and after metamorphosis, the dilation of the dorsal fin at a point vertically above the anus is very marked (see woodcut). This feature has been noted by Mr. Andrews in Japanese examples, and seems to be a point of difference from the specimens examined by Dr. Günther (*z. Zool. Anz.* 18, 1895, p. 59). In the diagram (Fig. 1), which was drawn from a preserved specimen, the notochord is curved up dorsally at the posterior end. This seems to occur in all the preserved examples I have examined, but it is certainly not constant during life.

F. P. BEDFORD.

Zoological Laboratory, University College, W.C.

Indian Corn.

I THINK I can satisfy your correspondent, Mr. Kumagusu Minakata (*NATURE*, February 22, p. 392) about the "maize." I have not Athanasius Nikitin's travels before me, but I have been over a good deal of his ground—and professionally in charge of it—with the book in my pocket.

We cannot now be sure what cereal he meant by "Indian Corn." Probably the term includes several species of Indian millets, great and small; species of *Holcus* and *Eleusine*, perhaps even rice. But *Zea Mays*, though well known along Nikitin's line of march, is not a staple grain there even now, though I understand it to be so used, to some extent, a few degrees northwards.

I do not think that any Anglo-Indian botanist will be found to treat it as other than a Portuguese or Musalman importation from the West. The natives certainly look upon it as an imported plant; like potatoes, tobacco, and several others. I suspect that the native trivial name, *Maká*, implies that some seeds may have been brought to India by pilgrims returning from Arabia.

As to Japan, that country is so much nearer to America, and has so ancient a civilisation and commerce, that I should think it very likely to have received American seeds of maize and of other plants long before the Indian peninsula, though that country is now full of Mexican and Peruvian plants—some thoroughly naturalised—which have come "with the sun."

At one time I thought that there were representations of maize-heads in the Ajantá caves, but I have had to give the idea up, after examination on the spot.

W. F. SINCLAIR.

Chelsea, February 23.

Colour of Horses for Service in Hot Countries.

GENERAL DAUMAS, of the French Army, states in his book on the horses of the Sahara that dark-coloured horses bear great atmospheric heat much better than light-coloured horses. I have had many opportunities in India of proving the correctness of this observation; but I have not been able to find a correct explanation of this fact, and would therefore feel greatly obliged if you or any of your readers would give me it.

When the temperature of the surrounding air is much higher than that of the animal body, the fact of a horse's coat being dark would at first glance appear to be a disadvantage, because it would absorb heat faster than if it were light in colour. Its power of radiation is evidently greater than that of heat absorption. The colour of tropical animals, as we all know, is darker than that of animals in colder climates.

In speaking of light-coloured horses, I refer to the coat (hair) and not to the skin. Absence of pigment in the skin appears to decrease a horse's resistance to the effects of atmospheric heat. Respecting this point, I have not sufficient data to make any definite statement.

M. H. HAYES.

Rugby, March 3.

NO. 1584. VOL. 61]

An Interesting Case of Resonance.

A CURIOUS example of resonance is to be noticed in Llandogat Church, Llandovery, South Wales. In one of the windows there is a pane of glass which is not very tightly fixed, being free to oscillate with a definite frequency, which happens to correspond to the frequency of the low pedal "G" of the organ. The consequence is that when the service is taken in G, at the end of each of the Responses, Amens, &c., quite a loud buzzing noise is produced by the resonance of the window; and I have seen strangers sitting near the window seem quite perplexed, not knowing what causes the noise.

Llandovery College, March 4. KENNETH MCMURTRIE.

THE RELATION BETWEEN THE PERIODIC CHANGES OF SOLAR ACTIVITY AND THE EARTH'S MOTION.

ONE of the most interesting questions arising from the problem of the sun's activity is that of a possible connection between the varying display of forces on the solar surface and certain phenomena on our planet. The evidence which has been gradually accumulating can hardly fail to convince us of the existence of an intimate, though still mysterious, relation between some of the manifestations of the earth's magnetic forces and the state of dynamic action on the sun. Not only the extraordinary coincidences repeatedly recorded between solar eruptions and terrestrial magnetic storms, but still more the striking synchronism between the varying frequency of solar spots and the observed changes in the display of auroræ, and in the daily oscillations of the magnetic needle clearly point to that conclusion. Scarcely less certain seems to be the fact, confirmed by many recent investigations, that a greater or less disturbance of the sun's surface is attended by corresponding effects upon terrestrial temperature, rainfall, and other meteorological phenomena.

But there appears to me to be good reason for believing that the influence of the solar activity upon our planet is of an even more profound and far-reaching nature than has hitherto been imagined. I shall endeavour here to state as briefly as possible the results of investigations (more fully developed in *Astr. Nachr.* No. 3619) which have led me to conclude that the period of solar activity can be distinctly traced in the minute residuals which it has not hitherto been possible to eliminate from the observed values of the earth's elements. We are thereby led to infer that the same unknown force which apparently plays so important a part in the meteorology of the sun, acts upon the motion of the earth to such a degree as to produce perturbations which, though minute, are yet of considerable importance from a theoretical and even practical point of view.

As regards the variation of the spot-phenomenon, all the material here required could be taken from Wolf's *Astronomische Mittheilungen*. The chief results which we owe to the never-tiring zeal of this eminent astronomer, and to his intense devotion to this particular branch of astronomical science, are too well known to require, for our present purpose, more than the remark that there are two well-defined periods in the spot-development, the shorter embracing, on an average, about eleven years, and the longer covering, in Wolf's opinion, nearly six times that interval. These two periods are equally important for the following investigation, the curves of the residuals showing the influence of the greater cycle not less distinctly than that of the shorter one. To mention some of the principal features of the "great" spot period—this being probably less familiar to men of science than the eleven years cycle—it may be stated that this curve rises from a minimum near the middle of last century to a high maximum in 1783, then rapidly descends to a low minimum in 1816, attains subsequently another high maximum in 1838, descends again to a moderate minimum in 1861,