

surroundings encourage the formation of sound teeth in a sound body; but I cannot but think that the principal cause of caries must be looked for in the food. It is plainly shown by many investigators, and in the paper above referred to, that caries is rare among peoples who subsist principally upon animal food; the Esquimaux showed, among sixty-nine skulls, only two cases of caries, and the largest amount of disease was found among those races who lived upon a mixed or exclusively vegetable diet. These results are, of course, easily understood under the more accurate knowledge which we now possess of the immediate causes of dental caries.

As to the relative frequency with which different teeth are affected, I think statistics plainly show that it is the first molar tooth of the lower jaw which is most prone to decay of any tooth in the series, and most authorities consider the second lower molar as the next in order; with these two exceptions the upper are more frequently diseased than the lower teeth. This would, however, not affect the argument, as the lower molars are of course also supplied by the fifth nerve.

Structural defects, due to inherited weakness or imperfect nutrition during the development of the teeth, combined with the use of soft cooked food, which is long retained in contact with them, and is of a nature eminently suitable for fermentation, give us, I think, the principal factors of decay among civilised races.

While allowing the influence of nerve strain in early childhood, and as a factor in hereditary transmission of defective structure, I fail to see how it can influence teeth already formed.

May 27.

J. HOWARD MUMMERY.

Centipedes and their Young.

REFERRING to Mr. Ulrich's letter in your issue of April 5, I send the following remarks, which no doubt will interest some of your readers. During my eight years' residence in Guiana, I have frequently had brought to the museum, centipedes of from 5-8 inches in length, carrying their young clasped by means of their legs to all parts of the under-side of the body, though generally the young have been clustered in dense masses rather than scattered. In their very early stages the young are closely clustered, and seem quite unable to clasp their parent in turn, but later they become very restless, and will be seen moving about independently, and when clustered by the action of the parent they are incessantly changing their position in the cluster. When the young are thus bunched together, the body of the parent is coiled upon itself at that part; and the contrast between a centipede in this position, and a scorpion carrying her young upon her back, just as a small opossum does, is a very marked one.

I had imagined that this habit of the centipedes was widely and generally known; and indeed Packard ("Guide to the Study of Insects," p. 674) remarks that "Wood also states that the female guards her young by lying on her side, and then coiling her body passes them along by a rapid cilia-like action of her feet, thus arranging them satisfactorily to herself." This is but a very terse description of what will be observed when one disturbs a centipede and the arrangement of her young about her body.

As remarked by Dalton ("History of British Guiana," vol. ii. p. 267), the centipedes "lay their eggs in clusters like little berries on the ground, and the female chooses an obscure place for this purpose, as under flower-pots, where she can remain until the eggs are hatched." Centipedes are not seldom met with in such obscure and uniformly moist places as under flower-pots and tubs, or boards and shingles, with their eggs clustered as described.

With regard to the disappearance of the young ones from the box forwarded from Trinidad to London, the most likely explanation is that they were eaten by the parent. If the parent centipede be kept with the young ones, and left unfed for a day or two, it will be observed to feed quite leisurely and greedily at times on its young. This I have witnessed directly in three separate cases where they had been kept unfed in a long glass jar in the museum. The most desirable food for centipedes in the tropics, I may incidentally remark, is the cockroach.

J. J. QUELCH.

The Museum, British Guiana, May 10.

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The Penetrative Power of Bullets.

I HAVE been stimulated by the recent trials of the bullet-proof cuirass, to try a few experiments on the subject. I will only mention one experiment, which I made this morning, assisted by several members of the junior scientific club here. It occurred to me that if the energy of the bullet could be made to act at rather a large angle to its line of flight, its penetrative power would be diminished. To effect this, I arranged a number of soft iron rods $\frac{1}{8}$ -inch in diameter and 5 inches long, side by side and touching a piece of deal board; on these another layer was placed, so that one of the upper rods touched two of the under ones. A sheet of thin rubber $\frac{1}{16}$ -inch thick, placed on this, separated it from a similar combination attached to it at right angles; and the whole formed the target. The rifle used was a Winchester, 22 bore, carrying a long bullet. At a distance of 20 feet the bullet penetrated 5 inches of hard pine with certainty; but when the bullet fired at the same distance hit my rod target, it failed to penetrate even the first layer, but only drove the upper rods aside nearly at right angles to the line of flight. The next experiments will be made with heavier materials and larger shot. Possibly a similar arrangement, but of large steel cylinders, might make a satisfactory barrier to the shot of big guns.

FREDERICK J. SMITH.

Millard Engineering Laboratory, Oxford, June 1.

The Garhwal Landslip.

LET me point out that the paragraph on p. 109 of NATURE for May 21, stating that the landslip that had occurred in the Garhwal district in the Himalaya, blocking up the Bireh Ganga river, had burst, causing the loss of many lives, is erroneous. The catastrophe reported from India had reference to a locality in Kulu, and not to Garhwal, the two being several hundred miles apart.

An accurate description of the Garhwal landslip will, I hope, be shortly published in the Royal Geographical Society's journal. The obstruction is being carefully watched, and the water has not yet topped it. There is, I think, considerable reason to anticipate that no great destruction will be caused at this place, as the landslip is of such vast dimensions as to make it almost impossible that it should be carried away in a manner to give rise to a great and sudden flood. It is upwards of a mile in length and two-thirds of a mile wide, rising about 900 feet above the original level of the valley, and being largely composed of enormous masses of rock.

June 1.

R. STRACHEY.

Research Work.

MAY I be allowed to suggest that it would be a great help to many interested in science if an authorised body, such as the British Association, were occasionally to indicate paths of research work in different branches of science, especially in physics and chemistry, which would offer a reasonable prospect of leading to useful results? Many, especially among those engaged in educational work: away from London, have not the advantage of continued intercourse with the leaders of scientific thought which would give them the opportunity of forming a judgment themselves, and the fear of having been forestalled by others makes them hesitate to devote the time required for a sustained course of experimental research. Within the writer's experience, men whose judgment carries great weight do not individually feel inclined to give advice which they consider ought primarily to be devoted to the advancement of their own students. The advantages of a laboratory, of leisure time, and of a desire to add their quota to the stock of knowledge are not, by the wise, thrown away, but a great deal of energy, at present more or less dissipated, might be diverted into more useful channels if the above suggestion were carried out—offering each one the opportunity of choosing that particular line of research which most nearly satisfies the conditions in which he is placed. The idea might be still further developed by associating workers together for a common end, even at the risk of not being able to eliminate the personal factor.

W. G. WOOLLCOMBE.

Birmingham, May 31.

A Daylight Meteor.

THE following account of a meteor, seen by me in full daylight, may be of interest to readers of NATURE. It was written a few hours after the meteor appeared.