moved off to the right very gradually as the cooler end of the bar became heated, but was brought back to a convenient point on the scale by means of a controlling magnet. When the state of steady flow was reached, the bunsen flame was removed, and water was immediately poured over the heated end of the bar. The spot of light on the galvanometer scale immediately moved off to the right, indicating an immediate rise of temperature at the cooler end of the bar.

The rapidity of the action was a second source of surprise to me, as it far exceeded the velocity of propagation of heat along the bar by conduction. I was obliged to discontinue this line of work for a time, and did not return to it till 1895, when I repeated the experiments described above, this time, however, using brass rods of various dimensions. In the case of the brass rods I failed to observe the same phenomenon, and concluded that the effect was due, as I had supposed in 1888, to much the same cause as recalescence.

I should judge from my results that if the effect exists at all in brass, it is yet much more pronounced in iron or steel.

At the time I made my experiments at Johns Hopkins University, I drew the attention of Prof. Henry A. Rowland and Dr. Louis Duncan to the matter, the latter witnessing the experiments, and later I discussed it with Prof. Ogden N. Rood, of Columbia University, New York City. Prof. Rowland pointed out that theoretically there should be a very slight instantaneous effect, but that it should be a reduction and not an increase of temperature.

That the effect just described is altogether unaccounted for by the present mathematical theory of the propagation of heat in conductors is not very surprising in view of the fact that that theory postulates the constancy of the specific heat and thermal conductivity of the medium, whereas at high temperatures these properties vary considerably with the temperature, and particularly in the case of iron, the physical state undergoes a complete change of what Hopkinson termed the *critical temperature*, which varies in different specimens from 690° C. to 870° C.

In attempting an explanation of the phenomenon which we have been discussing, it seems to me fair to assume that the heat producing the sudden rise of temperature observed, is not transmitted along the rod with the great velocity observed in the tests, but that it exists at the cooler end of the rod before the rise of temperature occurs. When iron or steel which has been heated to redness is suddenly plunged into water a marked change takes place in the properties of the metal, and if this change of character in the metal is in part transmitted from particle to particle to the other end of the rod, and results in a lowering of the heat capacity of the material, a rise of temperature will result as observed. JOHN STONE STONE.

20 Newbury Street, Boston, Mass., U.S.A., September 19.

Animals and Poisonous Plants.

FROM repeated observations in my own garden, I know that song-thrushes will eat ripe mezereon berries greedily. In the winter of 1896 they cleared a small bush containing, perhaps, two hundred berries, in the course of a week or two, returning at once when driven away, and becoming half-stupefied; so that they might, apparently, have been caught with the hand.

Dr. Withering states ("British Plants," ed. 1812) that six berries of this shrub (*Daphne mezereum*) will kill a wolf.

According to the same authority, *Cicuta virosa* is a certain poison to cows; while goats devour it eagerly, and it is not injurious to sheep and horses. As to *Atropa belladonna*, a case which received much attention at the time may be found in the daily papers of some twenty years ago. A family were poisoned by eating rabbit-pie, the symptoms being those of atropine poisoning; and the inquiry, which followed, showed that rabbits do often eat deadly nightshade berries. J. C.

Loughton, Essex.

WITH reference to Mr. Bennett's inquiry as to the consumption of poisonous berries by birds, I remember a young blackbird, some years back, who used to frequent the garden of the house in which I was staying, and who eagerly swallowed the berries of the *Daphne mezereum*. He was rather tame and would take them when I threw them to him, following them as they rolled along the ground, as a chicken would go after peas. I see that Sowerby confirms the ordinary opinion as to the poisonous nature of these berries: "The whole plant is a powerful irritant, both bark, leaves and *fruit* acting poisonously if taken in large quantities. *A few of the berries have been known to cause death when swallowed.*" The blackbird did not seem the worse for them. EDWARD M. LANGLEY.

16 Adelaide Square, Bedford, October 15.

An Osteometric Index-Calculator.

I SHOULD feel obliged if any of your readers could inform me whether there is in use among anthropologists any mechanical appliance by which indices can be determined without loss of time and the possible inaccuracy attending an arithmetical calculation.

I am anxious to obtain information on this subject in order to find out if there is any simpler or possibly better instrument than one I have constructed. It consists of a graduated quadrant and a movable arm, and it is very helpful in doing the purely arithmetic work, as it shows accurately, at a glance, the index required from any two figures, and does not work by logarithms, as does the slide rule of engineers, which might be used for the purpose. DAVID WATERSTON.

Anatomical Department, University of Edinburgh, October 11.

Capture of Curious Crustaceans.

TWO living specimens of that very curious Crustacean *Stenorynchus phalangium* were taken in a net, off this coast, yesterday. E. L. J. RIDSDALE.

The Dene, Rottingdean, October 14.

A SHORT HISTORY OF SCIENTIFIC INSTRUCTION.[1]

II.

I MUST come back from this excursion to call your attention to the year 1845, in which one of the germs of our College first saw the light.

What was the condition of England in 1845? Her universities had degenerated into *hauts lycées*. With regard to the University teaching, I may state that even as late as the late fifties a senior wrangler—I had the story from himself—came to London from Cambridge expressly to walk about the streets to study crystals, prisms, and the like in the optician's windows. Of laboratories in the universities there were none; of science teaching in the schools there was none; there was no organisation for training science teachers.

If an artisan wished to improve his knowledge he had only the moribund Mechanics' Institutes to fall back upon.

The nation which then was renowned for its utilisation of waste material products allowed its mental products to remain undeveloped.

There was no Minister of Instruction, no councillors with a knowledge of the national scientific needs, no organised secondary or primary instruction. We lacked then everything that Germany had equipped herself with in the matter of scientific industries.

Did this matter? Was it more than a mere abstract question of a want of perfection?

It mattered very much! From all quarters came the cry that the national industries were being undermined in consequence of the more complete application of scientific methods to those of other countries.

The chemical industries were the first to feel this, and because England was then the seat of most of the large chemical works.[1]

Very few chemists were employed in these chemical works. There were in cases some so-called chemists at about bricklayers' wages—not much of an inducement to study chemistry; even if there had been practical laboratories, where it could have been properly learnt. Hence when efficient men were wanted they were got from

1 An address delivered at the Royal College of Science by Sir Norman Lockyer, K.C.B., F.R.S., on October 6. (Continued from page 575.)

1 Perkin, NATURE, xxxii. 334.