

had an internal diameter of 16 cm., an external diameter of 28 cm., and a height of 6 cm., and it was possible to obtain a magnetic field of many tens of gauss.

Rising from the copper pipe, the yellowish smokes (obtained with iron electrodes by condensation of iron vapour) showed a thick layer of fumes where traversed by polarised light. In these conditions, putting on the magnetic field, light appears through the crossed Nicols and remains until the field is cut off.

In preliminary experiments I was able to determine the following characters of the observed phenomena :—

(1) Turning conveniently the analysing Nicol, chromatic polarisation is obtained.

(2) With monochromatic light it is not possible to reach extinction by turning the analyser. Using a Babinet compensator, a suitable displacement of fringes, with field excited, was observed, and appeared as positive birefringence.

(3) With light polarised in a parallel or normal plane to the direction of the field the phenomenon is not manifest.

Moreover, if the coil is arranged in a vertical position the phenomena appear if the axis of the coil is normal to the polarised luminous beam, but not if the same axis is parallel to it.

Tests made with copper electrodes gave quite negative results with the above-described arrangement. This may be explained by the weakness of the field, as by employing a powerful electromagnet the effect appears also with smoke from copper electrodes.

L. TIERI.

The Physical Institute, University of Rome,
August 1.

The Exploitation of Irish Peat.

PROF. RYAN in his article under the above title in NATURE of August 4 (p. 728) states that the labour difficulty is a serious obstacle in so far that the work is seasonal. I should like to suggest that this can be overcome by adopting the method employed for the production of moss-litter (used for bedding for animals) as now practised in Scotland and elsewhere. This method allows the men employed to be engaged in cutting peat in the earlier part of the winter and whenever the weather does not permit other operations. It follows that a great quantity of the wet peat lies throughout the winter exposed to the weather, and by the alternate freezing and thawing which it experiences the texture is very much opened up. Consequent on this, when the peat is built up in the spring it dries very much more quickly than material newly cut.

It is true that this method is not practised by crofters and others who depend on peat for fuel for domestic consumption, because the resulting product is not the hard, dense, compact body which is most suitable for burning in an open fire. However, for the exploitation of peat on a large scale this should not be necessary, since the peat is bound to be burned in closed furnaces with a strong draught. So far as my experience goes, it leads to the conclusion that the texture only, and not the composition, is altered by exposure during winter.

The adoption of this method would solve one of the most important labour problems, namely, the constant employment of the necessary able-bodied men. It would not permit the employment of women throughout the whole year, but would require their services to be dispensed with for about three months during the worst part of the winter. Whether such an industry could furnish an adequate wage for the

workers in it is a question that can be considered only with reference to the specific conditions of surrounding industries and consumers.

ALEXANDER FLECK.

26 Manor House Road, Jesmond, Newcastle-upon-Tyne, August 8.

Scarcity of Swallows.

THE following may not throw light upon the scarcity of swallows in England this year, as noted in NATURE of July 14, p. 628, but will explain a shortage in another part of the world, and may be of interest and suggestive.

I live in the Gran Chaco of Paraguay, South America. In July, 1920, there was a succession of dull days extending over a week, accompanied by fine rain and a temperature varying between 20° and 10° C., strong winds also prevailing. On the fourth day of these conditions the swallows sought refuge in the buildings of the Mission Station, where I reside, and for three days dead bodies of the birds were picked up, and afterwards no more birds were seen. A few days later I had to make a journey which took me in a direct line for 120 miles, during which I did not see a single swallow. Managers of four cattle farms through which I passed reported a mortality of swallows at their establishments similar to that seen at the Mission Station. From other reports I concluded that the whole area of the Gran Chaco had been affected by the bad weather, and as in the month of July swallows are always more numerous than in other months and pass in flocks northward, I fear the mortality to swallows in South America must have been very great. The deaths were the result of the lack of insects rather than of the cold.

ANDREW PRIDE.

3 Town Bank Road, Ulverston, July 26.

Earthworms Drowned in Puddles.

ANGLERS use earthworms, and worms found in the little heaps of mud-scrappings on country roads are specially valued as being of a fine, delicate pink colour, clean and tough. I have heard anglers in North Wales say that no worms were so good, especially for sea-trout. But since road-tarring became so general the phenols (=carbolic acid) dissolved out of the tar by rain destroy the worms. Unfortunately, in numberless cases the trout have also been destroyed, adult fish as well as fry, and American experiments have proved that the spermatozoa of fish are killed by carbolic acid from tar even when so diluted as to be almost undetectable by any test.

R. B. MARSTON.

19 Adam Street, Strand, August 7.

The Neglect of Science.

A LADY called on me to-day saying she had been sent by the sanitary inspector of a large town a few miles from Manchester with specimens of a little winged beetle (*Niptus hololeucus*), which she and the inspector thought might be bed-bugs.

Is it not extraordinary that those who are placed in posts of great responsibility in sanitary matters are so ignorant of their job that they cannot distinguish a flat wingless bug from a harmless and almost spherical beetle?

I wonder how much money has been wasted in unnecessary fumigation and the destruction of bedding by the crass ignorance displayed by sanitary inspectors of the elements of the natural history of their calling.

SYDNEY J. HICKSON.

The University, Manchester, August 11.