

SCIENCE DEPARTMENT.

[A series of notes for THE MONTHLY, by Henry Montgomery, M.A., Coll. Inst., Toronto.]

MR. HANNAY, a skilled chemist of Glasgow, claims to have succeeded in producing a form of crystalline carbon closely related to diamond, especially in the quality of hardness; rubies, sapphires, and natural diamonds having been deeply scratched by the "artificial diamond." We await the publication of the process by which the long-sought-for result has been obtained. In all likelihood diamonds will soon become plentiful and their price within easy reach.

ABOUT four years ago the British Government decided that the sum of four thousand pounds be annually devoted to the encouragement of original scientific work. Labourers in Science in Great Britain and Ireland have received due allotments of this grant; but as the limit of five years was attached to it, the question is now under consideration whether "it is desirable in the interests of Science, that the fund should be maintained," and, if so, in what form?

THERE is an ingenious contrivance known as the "Locomotive Indicator," made use of with great profit in the United States. At regular intervals it is sent out to indicate the condition of the track. This is done by means of a machinery of wheels and a ribbon of paper. The wheels are put in motion by the movement of the locomotive, and at every jolt, caused by a defect in the track, the paper band receives a mark from the wheels. Every mile is also marked, so that the locality of any fault in the line may be easily determined.

It has been proposed by Professor Hagen, of Harvard, to substitute diluted yeast for "Paris Green," Hellebore, and other poisonous substances heretofore employed for the

destruction of insects injurious to vegetation. He advises the use of yeast diluted with water and applied by a sprinkler or a syringe, particularly for checking the ravages of the potato-beetle, the cotton-worm, vine-pest, and Colorado grasshopper. On the surface of yeast there grows a parasitic fungus, that when the yeast is sprinkled on the potato-beetle, rapidly penetrates and traverses the internal organs such as the "tracheæ," and in a few days causes the death of the insect. This fungus acts very well as a ferment in the process of baking.

ANOTHER formidable animal is reported as discovered by the diamond diggers of South-western Africa. The natives, however, appear to have been well aware of its existence for a long time past. It is known among them as the "Bear-lion," which, according to the description given, seems quite an appropriate name. It is a combination of bear and lion, its colour being a tawny yellow with dark spots. The general outline of its body is lion-shaped, its legs comparatively short, thick and powerful, and its head and neck extraordinarily large. Its mode of progression is that of walking or running, and not by springing or bounding, as in the case of the lion.

"A NEW Point of Resemblance in the Respiration of Plants and Animals," is the subject of a paper read a few months ago by Dr. Jamieson, of Australia. The now well-known fact that plants as well as animals inhale oxygen and emit carbon-dioxide gas is there referred to by Dr. Jamieson, who asserts that oxygen in plants, as in animals, is but *loosely* combined, and is therefore readily parted with when other substances having a