

the Commission, which is the body responsible, wishes to place no check on scientific excavation, whether by organisations or individuals properly accredited; but it aims at the 'amateur' who seeks to exploit a site for his personal and pecuniary gain. In this praiseworthy object, French archaeologists will have the moral support of their colleagues, whatever their nationality, and also in what is clearly their secondary object, namely, to secure the control of the finds—thus averting such a catastrophe as occurred when the skeletal remains found in the caves of Le Moustier and Combe Capelle were lost to France.

Restoration of Roman Bridge, Littleborough, Lancs

ADVANTAGE has been taken of the unemployment problem at Littleborough, Lancs, to invite the co-operation of voluntary workers among the unemployed on the 'dole' in the repair of the Roman road over Blackstone Edge. A part of the work contemplated has now been completed by the repair of the Roman bridge at the junction of Black Castle Clough and Rag Sapling Clough, which carries the road over Black Castle Clough. Some time ago, Mr. J. H. Price of Rochdale directed the attention of the Rochdale Literary and Scientific Society, and through it, of the Society for the Protection of Ancient Monuments, to the fact that the bridge was in danger of being swept away. Mr. Price's examination of the bridge had revealed the fact, which had been completely forgotten in the course of time, that originally it consisted of two culverts, one of which had collapsed and had become completely overgrown with grass. The original length of 25 ft. had thereby been reduced to 12 ft. This culvert has now been restored and the bridge repaired, under Mr. Price's supervision, with the assistance of local firms who volunteered transport, material, etc. The work was carried out with the approval of H.M. Office of Works. Both Roman road and bridge are scheduled as ancient monuments. It is hoped to carry out repairs on part of the road in due course by the same method.

Salamanders and the Pollution of Drinking Water

A CURIOUS and unsuspected source of pollution of drinking-water has just been discovered in Cattaraugus County in western New York State (William G. Hassler in *Natural History*, New York, May-June, 1932, p. 303). Certain spring supplies of water continued to give unsatisfactory laboratory tests even after drastic steps had been taken to protect the springs from outside pollution. Further examination revealed that salamanders, large newt-like amphibians, belonging to four different species, occasionally occurred in the springs, and though a first examination showed that only a small percentage contained the colon bacillus, the investigation was continued. Nearly two hundred purple salamanders (*Gyrinophilus porphyriticus*) were marked with identification discs, and subsequent collecting proved that sometimes individuals wandered as much as sixty-five feet from the stream, apparently in search of food. One was observed eating fly larvæ which were living on mammalian refuse, and this settled the question of how colon bacilli entered the food canals of the

salamanders. A second surprise was sprung upon the investigators when they studied more closely the numbers of salamanders in the springs themselves. Purple salamanders were not thought to be particularly common, but repeated nightly visits resulted in a catch of 144 in one spring, which contained about fifty more uncaught. Yet there were occasions when not one of these salamanders could be found, although all the catch was marked and returned to its spring. Laboratory experiments gave some idea of the extent to which contamination might take place. Over a period of 122 days, one salamander excreted a sufficient number of colon bacilli to contaminate 237 gallons of water heavily enough to be considered dangerous on every test. It is believed that the creatures act as reservoirs or incubators, and once infected with colon bacilli, continue to excrete them so long as there is food in the stomach or intestines to supply nourishment to the bacteria.

Fishing with Captive Sucking Fish

MORE than four centuries ago, Columbus observed the strange custom of catching fish and turtles by means of captive sucking fish in the "Jardinellas de la Reina". The general impression has been that these islands were near Haiti and Jamaica, but C. Ralph de Sola points out that a more likely place is the archipelago in the Bight of Manzanillo on the south coast of Cuba (*Copeia*, p. 45, 1932). If this be so, Gudger is wrong in concluding that the original site of the discovery of Columbus "no longer witnesses the exploits of the fisherman fish", for the Siboneyes of southern Cuba, a people of Carib extraction, still practice remora-fishing to a considerable extent. De Sola describes a fishing trip from Matanzas, Cuba. To the under-planks of the boat two sucking-fishes were firmly attached by their discs, and when a turtle was sighted basking on the surface, the fishes were detached and cast as far as possible towards the turtle. The sucking-fishes were themselves held captive by a long thin rope of *majuga* bark, attached in front of the tail, and so soon as they had fixed upon their quarry, the lines were drawn in and the captured hawk's-bill turtle taken aboard. Throughout the proceedings the lines had to be kept taut, and the author states that owing to the arrangement of the lamellæ of the sucker, it is impossible for the remora to relax its hold when tension is placed on its horizontal axis. It is curious that so peculiar a mode of fishing should be found in many distant parts of the world, but Gudger's records from various localities in Africa, Asia, Australia, South America, and the West Indies show that it is almost cosmopolitan in tropical seas.

Eradication of Slugs and Snails

IN a communication to NATURE on the eradication of slugs, which was the subject of a note in these columns on July 16 (p. 90), Mr. Walker Van Riper, 771 South High Street, Denver, Colorado, contributes another method of control based on his own experience. A generous distribution of a solution of ammonium sulphide (1 part in 30 parts of water) killed nearly all the slugs present in his garden in a single

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application, and no injury to any of the plants was observed. Although no special apparatus is essential, the following method for distribution is suggested. A water suction pump (ejector) is attached to the garden tap, and hose piping leads from the suction opening into the barrel containing ammonium sulphide solution. The distributing hose is connected to the other end of the filter pump. On turning on the tap, the solution is drawn off from the barrel, mixed with water from the tap, and forced through the distributing hose. Calculation and trial are of course needed to determine the strength of ammonium sulphide solution in the barrel in order to yield 1 part in 30 in the distributing hose. Mr. Van Riper would welcome the reports of other experience in the use of this method for slug eradication.

Narcissus Pests

BULLETIN No. 51 of the Ministry of Agriculture and Fisheries (May 1932), entitled "Narcissus Pests", by Mr. W. E. H. Hodson, has recently come to hand. The object of this publication is to provide growers with reliable and up-to-date information enabling them to control the more common and destructive of the enemies of the narcissus. The Bulletin deals with the species of flies of which the larvæ are persistent enemies of the bulbs, while eelworms, mites, and other pests are also fully discussed. The most satisfactory treatment for all such pests is the submersion of the bulbs in water maintained at a temperature of 110° F. for three hours. If such treatment were not available it is highly probable that the bulb eelworm would by now have rendered commercial growing almost impracticable. The Bulletin is obtainable, price 1s. net, from H.M. Stationery Office or through any bookseller.

Penguins' Eggs

THE appearance of the eggs of penguins in some of the large London stores, where they were sold as epicurean novelties at ten shillings a dozen, led the Royal Society for the Protection of Birds to make inquiries regarding the source and supply (*Bird Notes and News*, vol. 15, No. 2, p. 39, 1932). The eggs were those of the Cape or black-footed penguin (*Spheniscus demersus*), and were obtained in one of the extensive penguin rookeries in the Cape Province of the Union of South Africa. The eggs were collected for sale under Government regulation, and the Trade Commissioner for South Africa informed the Society that during the months of April and May of the present year some 2000 dozen of the eggs were exported to Great Britain. We hope that the Government department which regulates the taking of the eggs will see to it that the strength of the penguin colony is not too seriously reduced, remembering the fate of the gare-fowl when commerce invaded its innumerable hordes; and we trust that the exceptional opportunity will be taken of associating the statistics of eggs taken with the total strength of the colony year by year, for the study of the effect upon the population of the colony as a whole.

Monument to Laplace

THE issue of *Revue Scientifique* for Aug. 13 briefly records the inauguration on July 3 of a monument to

the great French mathematician, Laplace, at his birth-place, Beaumont-en-Auge (Calvados). The monument, which is the work of M. R. Delandre, has been erected by international subscription, among the principal contributors to which were Messrs. J. H. Fry and J. Flanagan, of the United States, and the two Carnegie Foundations for Science and Peace. The unveiling took place in the presence of Maréchal Franchet d'Esperey, of the Société de Géographie of Paris, and distinguished representatives of the Academy of Sciences, the Paris Observatory, and the École Polytechnique. As recorded in *NATURE* for April 2, 1927, p. 493, at his death in March 1827 Laplace was buried in the Père Lachaise cemetery in Paris, but sixty-one years later, in 1888, his remains were exhumed and reinterred in the grounds of the family estate at the little hamlet of Saint Julien de Mailloc, situated between Lisieux and Orbec (Calvados). At the time of the reinterment, the monument which had marked the resting-place of Laplace in Paris was presented to the commune of Beaumont-en-Auge, and was re-erected in the cemetery there.

Discovery of the Deviation of the Compass

IN the July issue of *Science Progress*, Mr. N. H. de V. Heathcote brings together the data at present available for fixing the date of the discovery of the deviation of the compass from true north. The figure in the instructions of the Nautical Chart of Bianco of 1436 which has been taken as evidence that a correction for a deviation of 18° west of true north was allowed for, the author concludes has nothing to do with deviation. The first definite record of deviation he considers to be that made by Columbus in September 1492, during his first voyage across the Atlantic. In his record of his return in 1496 from his voyage to India, Columbus mentions Flemish compasses which read 11¼° west of north when the Genoese compasses read north. Mr. Heathcote points out that pocket sundials were in use in Germany about the middle of the fifteenth century which were set in the meridian by a compass; in the latter an allowance for a deviation of 6° east of true north was made, while in Etzlaub's road map of Germany of 1492 instructions are given for orienting it correctly by compass, an allowance for deviation of 11¼° being made. He concludes that pocket sundials with an arrow set 11¼° east of north were familiar objects in Germany before the time of Columbus.

Bibliography of Line Spectra

NO better comment could be made on the present importance of line spectroscopy than the publication by the American Physical Society in *Reviews of Modern Physics* (April) of a bibliography of the papers which have appeared between 1920 and 1931. This has been compiled by R. C. Gibbs, and is prefaced by a short elementary account of the interpretation of spectra. The bibliography is divided into three sections. The first, which contains the majority of the references, is a list of those papers which contained new data or discussions; these are divided according to elements, stage of ionisation, year of publication, and alphabetical order of authors, and in general, when one paper has dealt with several elements, it