

IN the Proceedings of the National Academy of Sciences, Washington (vol. i., p. 256), Dr. C. D. Walcott announces the discovery of bacteria in one of the petrified algæ from pre-Cambrian rocks in Montana, to which reference was made in NATURE last week (p. 354). They appear in the algal tissue as irregular chains of darkly stained cells from 0.95 to 1.3 microns in diameter, and are very suggestive of *Micrococcus*. It is not always possible to distinguish with certainty such fossils from purely mineral structures, but satisfactory traces of bacteria have already been detected in the fossilised remains both of animal and plant tissues in European Palæozoic rocks, and they are to be expected among the earliest organisms.

THROUGH Mr. Bassett Digby, the geological department of the British Museum (Natural History) has lately obtained a well-preserved front horn of the woolly rhinoceros from the frozen earth of northern Siberia. The specimen measures nearly a metre in length, and, though partly cut as usual by the natives who found it, shows the backward curvature of its slender apex and the lateral compression of its characteristic sharp posterior border. The new horn has been mounted, with a hinder horn already in the museum, above one of the exhibited skulls of woolly rhinoceros from Siberia. It is thus possible to realise the unusually large proportions of the horns in this extinct species.

THE question of the pollution of the air of our manufacturing towns has been a serious one for some time, and the report of the Air Pollution Advisory Board of the city of Manchester will prove a valuable document to those seeking to mitigate a serious evil. It appears that the domestic grate is the principal offender and that the modern factory with mechanical stokers is comparatively, if not absolutely, innocent. In many cases, however, the impurities are not due to indifferent stoking, and for these the electrostatic method of precipitation which has proved so successful in America may be recommended. An interesting account of the method and the results of its application will be found in the *Electrical Review* for May 14. Briefly, the polluted air passes between electrodes maintained at a difference of potential of 100,000 volts, and the particles of carbon, arsenic, potash, or chlorine are carried by the discharge to one of the electrodes. About five kilowatts are necessary to deal with about 30,000 cu. ft. of air per minute, so that the cost is slight. In many of the cases cited the value of the material recovered in a year exceeded the cost of installation and working of the apparatus.

THE *Times* Engineering Supplement for May 28 touches on a point in works organisation to which too little attention has been given in this country, especially in the case of small- and medium-sized factories. Before the war, our industries suffered severely from German competition; this has been attributed in varying degrees to free trade, lack of technical education, and so forth. As the output of our factories must now be increased, our contemporary asks: Given perfect workmen and entire absence of alcohol, is the management of such a high order that the output is a maximum? Are the pro-

prietors, or directors, so wholehearted in their patriotism that they lose no time? Are they so skilled in their respective spheres that they are able to guide their staff and workmen? In large firms the organisation is generally of a high order of efficiency, but it must be confessed that a large number of small firms work from hand-to-mouth in such a manner that output and delivery of orders to a stated time are quite problematic matters. Many of these smaller concerns are in the hands of a family, or financial men, who know nothing of the work being carried on, and whose sole object is to derive as large an income as possible with the minimum of effort. Such firms which are not producing a good average should be visited by skilled managers, and the real cause located. If lack of capital is the cause, the Government should assist; if incompetent management, the offenders should be removed; and if the cause is lack of plant which cannot be immediately rectified, the factory should be closed and the men drafted to a well-organised concern.

THE director of the Geological Survey of the Union of South Africa asks us to announce that no annual report of the Survey will be issued for the year 1914. The announcement is made to spare the necessity of inquiries from the many scientific institutions, etc., which are on the complimentary list of the Survey.

ERRATUM.—In equation 2 on p. 359 of NATURE of May 27, the symbol T should appear as a factor in the denominator of the fraction, and there should be a minus sign before r in the numerator. Both omissions were overlooked by the author in two proofs corrected by him.

OUR ASTRONOMICAL COLUMN.

OBSERVATIONS OF NEBULÆ AT THE HELWAN OBSERVATORY.—Mr. H. Knox Shaw describes in Bulletin No. 15 of the Helwan Observatory the observations made with the Reynolds reflector up to the end of September of last year, this paper being a continuation of that published in Bulletin No. 9. This work is described as being somewhat of a reconnaissance to see which nebulae would repay photographing with long exposures when the new Ritchey 30-in. mirror is mounted. The paper gives a list of the nebulae observed, and also one of thirty-one new nebulae confirmations of which have been made by second photographs in each case. Referring to N.G.C. 6729, the nebula attached to the variable star R. Coronæ, Aust., the author states that this nebula is certainly variable, and the question as to how its variability is connected with that of the star is being studied, and is promised as a separate paper.

STARS WITH PROPER MOTION EXCEEDING 0.50" ANNUALLY.—Mr. Adriaan van Maanen contributes to the April number of the *Astrophysical Journal* (vol. xli., No. 3) a very useful list of stars with proper motion exceeding 0.50" annually. This list is based on Porter's and Kobold's lists, which indicated proper motions greater than 0.50" annually, on Bossert's catalogue of proper motions of 2641 stars, and on numerous other subsequently published notes on stars of large proper motion. The present list is made as far as possible homogeneous throughout, and deals with 533 stars. A column is given showing the spectra of the stars as determined by Mr. W. S. Adams or Miss Cannon. The positions in right ascension and declination are