SOME STATE AGRICULTURAL EXPERIMENT-STATIONS.

A COMPARISON of the successive reports of the New-Jersey experiment-station shows that it has rapidly passed beyond that initial stage of nearly every American station, in which its chief duty is the 'control' of the trade in commercial fertilizers. It is still a fertilizer control station, and, as its report shows, has been active in this field; some two hundred analyses being reported, and much thought having evidently been bestowed upon the various problems arising in connection with the equitable sampling and valuation of these goods.

At the same time, this work occupies but fifty-four pages out of a total of a hundred and seventy-six, the larger portion of the remainder being taken up with reports of experiments bearing upon the broader questions of agricultural practice.

These latter furnish an admirable illustration of the class of experiments which, in a previous number of *Science*, we ventured to designate as empirical, as distinguished from rational — using these words, of course, in their technical sense. They are what are often called practical, as opposed to scientific experiments; but the word 'practical' has been so wrested, in popular use, from its proper meaning of 'pertaining to practice,' that its use in this connection is to be avoided.

Besides various minor matters, the most noteworthy experiments of this sort are the field experiments upon the growth of sorghum, and the comparison between field-corn and ensilaged fodder-corn.

In the last-named investigation, the questions proposed were, the comparative yield of digestible food per acre, the comparative cost of gathering it and preparing it for use, its relative feeding-value, and the relative exhaustion of the soil in the two cases. The results were throughout decidedly in favor of the field-corn; the grain and stalks yielding more and cheaper food per acre than the ensilaged fodder-corn, and food of equal milk-producing value, pound for pound.

The report of the Ohio station, while dealing with different subjects, resembles that of the New-Jersey station in the general character of the experiments reported. A great deal of attention has been given to testing varieties of wheat and corn, and the tables of results contain a vast amount of valuable information. The tests of methods of seeding or planting, of cultivation, mulching, use of fertilizers, etc., are extensive, and apparently carefully conducted, though we regret to observe the somewhat common lack of an adequate discussion of the results reached. Other interesting matter is to be found in the sections devoted to small-fruits and vegetables, insects, weeds, grasses, and various other subjects.

In brief, both these stations have done most excellent work of the kind attempted; and that this kind of work meets with popular approval, is evident in New Jersey, at least, from the fact that the station's original appropriation of five thousand dollars per year has been successively raised to eight thousand and eleven thousand dollars. Under the circumstances, it is not to be wondered at that the station has turned its attention chiefly or entirely to experiments relating to the practice of agriculture. At the same time, we cannot but regret that the American stations, as a rule, many of them with reasonably ample incomes, are doing so little, comparatively, to advance the science of agriculture, believing, as we do, that 'a sound theory is the surest guide to a successful practice.'

Fifth annual report of the New-Jersey state agricultural experiment-station for the year 1884. Princeton, N.J., *Robinson pr.* 1884. 176 p. 8°.

Third annual report of the Ohio agricultural experiment-station for 1884. Printed by order of the state legislature. Columbus, *Myers brothers, state printers,* 1885. 240 p. 8°.

NOTES AND NEWS.

A STATUE of Darwin, by Mr. Boehm, R.A., has just been placed in the great hall of the British museum on Cromwell Row, and arrangements for its unveiling will be made shortly. It is the gift to the nation of the Darwin memorial fund. It is found, that, after the payment of all expenses, over two thousand pounds will remain, which will form a Darwin fund, to be transferred to the Royal society, the income of which is to be appropriated in such a way as may be "best calculated to promote biological study and research."

— The Society for the prevention of cruelty to animals in the Netherlands has petitioned the government to introduce into Holland the rules with regard to vivisection drawn up by the Prussian authorities.

— In the Spanish congress on May 18, according to *Nature*, Señor Castelar called attention to Dr. Ferran's experiments in inoculation against cholera, and asked the minister of the interior to give a subvention to enable Dr. Ferran to continue his experiments on a larger scale. The minister, in reply, said he was unable to do so at present, but, as soon as it lay in his power, he would grant a sufficient sum, although, in his opinion, Dr. Ferran's experiments had not yet reached a sufficient degree of certainty to prove a complete success. He added, that a commission of medical men would be appointed to visit Valencia

and other towns, in order to study the experiments that are being made. In reference to this subject, Dr. Cameron, M.P., writes to the *Standard* that the under-secretary for foreign affairs has promised to instruct the British minister at Madrid to send home translations of any reports bearing on the system of inoculation with cholera virus attenuated by artificial cultivation, as a protection against Asiatic cholera, discovered by Dr. Ferran of Valencia. This having come to the notice of Dr. Ferran, that gentleman has sent Dr. Cameron a telegram giving the results up to date of a great test experiment which is at present being conducted by him, under the eyes of scientific commissioners at Alcira, a town near Valencia, where an epidemic of cholera is raging. According to Dr. Ferran's telegram, the population of Alcira is 16,000, and since the first of the present month 5,432 of its inhabitants have been inoculated with his protective virus. That would leave the number of those not inoculated about 10,500, or, accepting 16,000 as an exact figure, precisely 10,568. Of the 10,500 persons who are not inoculated, cholera has attacked 64, and proved fatal to 30. Of the 5,432 who have been inoculated. it has, according to Dr. Ferran, attacked only 7, and proved fatal in no single case. In other words, since the commencement of the experiment on May 1, one person out of every 163 has been attacked among the uninoculated population, and one person in every 352 has died of cholera; while among the inoculated population only one person in 776 has been attacked, and not a single person in the entire 5,432 has died of the disease. Dr. Ferran concludes his telegram by expressing the desire that a British commission should be sent to Alcira to verify these results.

— The first edition of Johne's little book upon the cholera bacillus ("Ueber die Koch'schen reinculturen und die cholera bacillen," Leipzig, *Vogel*) was published in January, and a second is already out. It is a pamphlet of some twenty-eight pages, giving the most complete directions for cultivating and observing the so-called comma bacillus according to Koch's method, from the preparation of the 'meat extract gelatine' to the microscopic examination. A woodcut showing the different rapidities of liquefaction of the gelatine culture-medicine by the comma bacillus of cholera, and the curved bacillus of Finkler and Prior, is given, and adds to the value of the work. It is an important contribution to the literature of bacteriology, furnishing, as it does, our first concise and complete statement of the methods of investigation of the special organism of which it treats.

— Capt. Sawyer of the bark Vidette reports that on May 17, 1885, a water-spout appeared to form, and rise to the north-east in a long, spiral column; position at the time, latitude 32° 10′ north, longitude 78° 5′ west. It rose until the sky above, extending over an area of a mile, was an inky black mass of heavy clouds, gradually moving in a south-west direction until within half a mile of the vessel, when it seemed to burst, the rain coming down in torrents for two hours. This was accompanied by sudden strong gusts of wind, shifting suddenly from one quarter to directly the opposite one, and with a force of six to eight. To the south and south-west before and during the formation of the water-spout, the sky, to an altitude of about sixty degrees, was black and very threatening, with thunder and lightning. This continued during the time alluded to, and finally ended with several sharp claps of thunder and a fifteen-minutes' fall of hailstones. The peculiarity of these disturbances was that the wind would change very suddenly with considerable force, throwing all aback without any warning. The temperature of the water was 81°, and of the air 60° to 78°.

— The time-ball of the U. S. naval observatory is to be transferred from the dome of the observatory to a flagstaff on the new State, war, and navy department at Washington. In its new position it will be more easily seen from the city. It will be dropped, as at present, by the observatory clock, on 75th meridian time.

— Among recent deaths we note the following: Dr. A. Enneper, professor of mathematics in the University of Göttingen, at Hannover, March 24, in his fifty-fifth year; Eugène Rolland, professor of mechanics, at Paris, March 31; J. C. Döll, botanist, at Karlsruhe, March 10, in his seventy-eighth year; Gustave A. von Klöden, geographer, at Berlin, March 11, in his seventy-first year; Dr. Wilhelm Duncker, geologist, at Marburg, March 13, in his seventy-seventh year; Dr. J Roeper, botanist, at Rostock, March 17, in his eighty-fifth year.

— Capt. George E. Belknap, U.S.N., has been ordered by the secretary of the navy to assume charge of the naval observatory on June 1, relieving Commander A. D. Brown, who has been acting superintendent since April 1, when Admiral Franklin was ordered to the command of the European squadron.

— The Harvard university bulletin for May contains nine pages more of Mr. Winsor's collation of the Kohl collection of early maps, which in this case deals with the east coast of North America, and four pages of Mr. Bliss's index to the maps in the English geographical publications, comprising a part of those of Asia.

— The third session of the International geological congress will be held this year at Berlin, commencing on the 28th of September. The meetings will occupy one week, and will be followed by geological excursions from the 5th to the 10th of October. The congress will be accompanied by an exhibition of geological charts and other collections illustrating the different branches of mineralogy and geological science. It will be remembered that this meeting was to have taken place last year, but was prevented by the outbreak of cholera.

— A memorial tablet to Professor Louis Agassiz has just been erected in the Sage Chapel of Cornell university, and will be unveiled at the approaching commencement.

— A National textile microscopical association was formed last Saturday by members of the corresponding societies of Boston and New York.