

far proved very satisfactory, and has a very decided advantage over the former system in the point of time required to establish understandings between the manufacturers and the Bureau. There are many questions arising in the inspection of steel which can be decided or answered only by reference to the Bureau's plans and specifications, and which now come direct to the Bureau; whereas under the former system of inspection they came through the Steel Inspection Board, and the information desired in connection with them was, of course, returned to that Board for its decision, thus causing much delay. The inspection of steel and the designing of machinery made of that material being now under one head, the plans and specifications for that machinery and the specifications for that steel can be better adapted to the full capabilities of the steel maker, and will not be apt to ask of him anything beyond his capabilities.

THE visitation of Algeria by locusts last year is described in the last report of the British Consul-General, which is quoted in the *London Times*. It seems that Algeria was visited twice during the year, the first flight appearing in the winter as far north as the Mediterranean coast, and a second one, which was normal, in the spring and early summer. There is no record of any flight such as the early one in the history of Algeria, and as they appeared so early it was believed they were sterile; but the females began to lay in the usual way, only several months too soon. But in place of being hatched out in the usual period, they took more than twice as long, which seems to be something wholly new and unexpected in the life history of locusts. The appearance of the insect so far north as the Mediterranean in mid-winter is believed to be due to the drought which in the previous year devastated the southern districts and the Morocco Sahara. There being no vegetation in the Sahara, the locusts were forced to leave the grounds where they spend the winter, and, without making the usual halts, to hurry forward to places where food was obtainable. Up to this it was believed that the *maximum* period for the incubation of the eggs was 45 days; but it has been shown now that it extends in some cases to 70 days, so that the period

may vary, according to the time of the year, from 15 days to 70. This unexpected visitation was met by exceptional exertions on the part of the government, the local authorities and trade committees. Oran, the province adjoining Morocco, was the only one invaded. The area over which the eggs were laid is estimated at 424,500 acres, and 270,120 bushels of young locusts were destroyed. The barriers, or lines of defence, made of the Cyprus apparatus, or of zinc, extended over 322 miles, while 27,113 ditches were dug at the foot of these to catch the young locusts. These figures do not take into account the work done by the administration of forests. The number of days' work furnished by natives during the campaign was 90,033. The efforts of the defenders were devoted mainly to saving the crops which were most valuable, such as the vines, and are said to have been very successful.

THE London County Council has adopted the following resolution: "That it be referred to the Parks Committee and to the Technical Education Board to consider and report as to the practicability of laying out plots of ground in certain parks in such manner as will afford assistance to scholars of elementary and secondary schools in the study of practical botany."

#### UNIVERSITY AND EDUCATIONAL NEWS.

THE report of the Treasurer of Yale University states that the additions to the funds of the institution during the past year amounted to \$450,055, largely from the Fayerweather legacy. During the past ten years the funds of the University have been about doubled.

THIRTY scholarships have been established in the department of philosophy in the University of Pennsylvania, ten of which will be available this year, twenty next, and the whole number the following year.

PLANS have been adopted for the new Wilder physical laboratory at Dartmouth College. The building will be of brick, three stories high, 107 feet long by 56 deep, with a wing in the rear. It will front on College street, between the Richardson Hall and the Medical College. The building will provide lecture rooms and

laboratories for chemistry, physics and astronomy.

A MOVEMENT has been started at Raleigh, N. C., for the establishment by the State of a textile school. A committee has been appointed to correspond with all mill-owners, newspapers and Legislators. In the Georgia Legislature a bill is pending for the appropriation of \$10,000 for the establishment of a textile school.

ON the recommendation of the governing board of the Sheffield Scientific School of Yale University, it has been decided to establish the degree of Master of Science, to be conferred on graduates of two years' standing or upwards, who have taken a first degree in science and who pursue successfully a higher course of study in science under the direction of the governing board.

DR LAFAYETTE B. MENDEL has been promoted to an assistant professorship of physiological chemistry in Yale University.

DR. GEORGE T. KEMP has been appointed professor of physiology in the University of Illinois.

THE director of Sibley College, Cornell University, has been authorized to establish a full professorship of railway machine design and locomotive construction. At present this work is carried on in existing departments.

PROFESSOR OSCAR LOEW, who has been for four years professor of agricultural chemistry in the University of Tokio, has returned to Munich. He will be succeeded by Dr. Bieler, now assistant in the laboratory of agricultural chemistry at Halle.

A CROOM ROBERTSON fellowship with an endowment of £8,000 has been created in the University of Aberdeen, with which Robertson was connected before being called to the Grote chair of philosophy of mind and logic in University College, London.

A CHAIR of geography has been established in the University of Würzburg.

THE Technical Institute in Munich has been given by the government 175,000 Marks for enlarging the electro-technical laboratory, 150,000

Marks for the erection of a laboratory for the agricultural station and 170,000 Marks for enlarging other buildings.

THE newly established medical school for women in St. Petersburg opens with 165 students.

THE Russian government has appropriated 400,000 roubles for the construction of a chemical laboratory at the Polytechnic Institute at Riga.

#### DISCUSSION AND CORRESPONDENCE.

##### DETERMINATE VARIATION AND ORGANIC SELECTION.

A FEW remarks may be allowed on the subject discussed in the reports of the papers of Professors Osborn and Poulton, on 'Organic Selection' in the issue of October 15th. I venture to make these comments now, although the more extended publication of the articles of the authors may remove my *causas scribendi*. Yet such preliminary reports have their main utility, to my mind, in arousing comments which may be of service to the authors.

I may throw my remarks into heads for the sake of clearness.

1. Professor Osborn's use of the phrase 'determinate variation' I find ambiguous, and the ambiguity is the more serious since it seems to me to prejudice the main contention involved in the advocacy of 'Organic Selection.' The ambiguity is this: He seems to use *determinate variation* as synonymous with *determinate evolution*. (See his discussion, SCIENCE, Oct. 15, pp. 583-4, especially p. 584, column 1, and paragraph 2 of column 2.) He says that *determinate variation* is generally accepted, and attributes that view to Professor Lloyd Morgan and myself. But it is only *determinate evolution* that I, for my part, am able to subscribe to; and I think the same is true of Professor Morgan.

'Determinate evolution' means a consistent and uniform direction of progress in evolution, *however that progress may be secured, and whatever the causes and processes at work*. Admitting 'determinate evolution,' the question, therefore, as to the causes which 'determine' the evolution is still open, and various answers have been given to it. The Neo-Lamarckians say