on pigeon-hybrids). Cannon therefore concluded, on this *a priori* ground, that such a separation of paternal and maternal elements must occur in the normal maturation-divisions, not only in the cross-bred, but also in the normal forms, and that in the character of these divisions must be sought the basis of the law. It is interesting that such a conclusion should have been reached by a botanist, on account of the fact that most recent botanical workers in this field have reached the result that transverse or reducing divisions do not occur in the maturation of the germ-cells in higher plants. It has, however, become clear that only the most exhaustive study of the most favorable material, particularly in the earliest stages of the maturation-divisions, can positively decide this question, and the importance of the most accurate and detailed further study of the phenomena is now manifest. The results I have indicated are already in part in press and will in due time be fully discussed by their authors. Should the study of the maturation-divisions indeed reveal the basis of the Mendelian principle we shall have another and most striking example of the intimate connection between the study of cytology and the experimental study of evolution.

EDMUND B. WILSON.

ZOOLOGICAL LABORATORY OF
COLUMBIA UNIVERSITY,
December 11, 1902.

THE ENLARGEMENT OF THE NAPLES STATION.

THE increased number of investigators who make each year the pilgrimage to Naples, as well as the development there of new departments of investigation, have made it imperative to enlarge the present buildings of the station. The plans for the new construction are finished, the money generously contributed, and the building is about to begin. The city of Naples, proud of her renowned Station, has given the ground for the new part. The new building will be placed near the end of the larger of the two present ones. The exterior of the new part is exactly like the larger, which is also the older, of the present buildings. The capacity of the working part of the Station will be doubled by this addition.

The new building will be devoted, in the main, to physiology and to physiological chemistry, for each of which there is to be a large laboratory, well equipped with the most modern appliances. In addition to these there will be a number of smaller rooms for special physiological work. A new feature will be rooms in which the water in the aquaria can be kept throughout the year at any desired temperature.

In the new building there will also be a large number of small rooms for zoological work—the old 'tables' in the big room opposite the present library will be given up, and the room itself added to the library. Thus the new plan, when carried out, will not only give more room, but also better accommodations.

With the awakening of zoological research in this country during the last twenty years there has been a steady increase in the number of those who go to Naples. The first American table, that of Williams College, was occupied during '83 and '84. Previous to that time eight Americans had occupied European tables. In '85 and '86 the University of Pennsylvania maintained a table; and then, after an interval of five years ('86 to '91) during which America was not represented, a table was supported by Major Davis, from '91 to '96.

The Smithsonian Institution has maintained a table from '93 to '02, which has been occupied by twenty-six investigators. Harvard University had a table for two years ('97–'02), and Columbia University has, through the generosity of a friend, paid, for five years ('96–'02), for half of 'The University Table.' Finally, the 'Association for Maintaining the American Women's Table' has supported a table for four years ('98–'02).

At present America maintains only three tables, 'The Smithsonian,' 'The University,' and 'The Women's Table.' These are entirely inadequate to allow all those who apply for tables to obtain them. For instance, there are five desirable candidates for 'The University Table' alone for the present year.

The total number of Americans who have occupied tables at the Naples Station, including the appointments to the end of the year, is eighty-one. If we omit the twelve names of those who occupied tables between '81 and '91, we find that sixty-nine American investigators have worked in Naples during the last eleven years. The international character of the work done in Naples is one of the greatest advantages to be derived from a sojourn at the Station. Here are to be seen the newest methods, and to be heard the latest points of view of some of the most advanced men from Germany, Italy, Russia, Austro-Hungary, Belgium, England, etc. This alone is an advantage, which we Americans, isolated as we are by distance from the older centers of investigation, can scarcely afford to forego. Let us hope, therefore, that America will not be niggardly in maintaining at least three tables as she does at present, and that in the near future their number may be added to, since even now they are inadequate to fill the demand.

Our national representation at the Naples Station can not be better shown than by an examination of the names of those American zoologists, botanists and physiologists who have worked in Naples. T. H. Morgan.

NOTES ON INORGANIC CHEMISTRY.

THE TELLURIC DISTRIBUTION OF THE ELEMENTS.

A paper on the above subject was read by William Ackroyd at the Belfast meeting of the British Association, in demonstration of the thesis that the telluric distribution of the elements is inversely in proportion to their atomic weights. The question of the relative quantity of the elements in that portion of the earth which is known to us is quite fully dealt with by Professor Frank W. Clarke in *Bulletin* 148 of the U. S. Geological Survey. Here the abundance of the elements is determined from large groups of analyses of rocks and other telluric products, but only twenty-one elements are considered. Ackroyd has adopted the commercial idea of price as a measure of plenty or rarity, a procedure which would seem to be of rather doubtful expediency. In some cases the price of the element itself is used; in other cases, especially where there is difficulty in obtaining the elementary form, some compound is considered. The latter is the case, for example, in the calcium group where the carbonates are used, and in the arsenic group where the basis is the oxid. Measured in this way, it appears generally that in each group the abundance of each element as measured by its commercial price is inversely proportional to its atomic weight. There are, however, a number of exceptions, where the element of highest atomic weight is more abundant than its immediate predecessor, as with barium, which appears to be more abundant than strontium; the same is true of mercury, lead, thallium, osmium, platinum, iridium and thorium. The halogens obey the general proposition, but their abundance is measured by their relative quantity in sea water. The conclusion is drawn that in the formation of the atoms from primordial matter less and less atoms of highest atomic mass were evolved, and that the universe became pervaded by the greatest quantity of those atoms which have the lowest masses. It is, in general, true that the most abundant elements are those of relatively low atomic weight, but Ackroyd's line of reasoning presents too many exceptions to bear out his conclusions.

THE NATURE OF ALLOYS.

The final report of the Committee of the British Association on this subject was presented at the Belfast meeting. The committee consisted of Messrs. Neville, Heycock and Griffiths, and the report covers a complete study of the copper-tin alloys. At least three solid solutions are formed during the solidification of these alloys. If the alloys have been cooled with sufficient slowness, the following conditions exist at ordinary temperature:

0 to 9 per cent. tin.—A uniform solid solution of copper containing tin, or, more probably, containing a compound in solution.

9 per cent. to 25.5 per cent. tin.—A complex of large crystals of the above solid solution in a minute eutectic of the same solid solution and Cu_4Sn.