

lus in a service where no positions of responsibility and direction are open to civil experts, however great their attainments and devotion to the public service."

Some months subsequently, in a letter to the committee of the National academy of sciences, the superintendent added the important considerations that the naval officers detailed by their department for coast-survey duty are almost without exception well pleased with their service in this capacity, although, in reality, more arduous than the regular routine of the naval service in time of peace. They are at all times, however, perfectly under the control of the navy department, and subject to being detached and ordered upon other duty. No officer of the navy above the rank of commander is attached to the survey, and most of the officers are of the grades between ensign and lieutenant. In this survey work they obtain a most valuable experience, which stands them in great stead on foreign stations.

The alleged duplication of work by the coast survey and the hydrographic office of the navy department is often urged as a reason for the transfer of the survey to the navy; but in reality there is no clashing. The special work of the hydrographic office consists in publishing charts of foreign coasts for the use of the navy and our commercial marine, as also of directing surveys on foreign coasts by our naval vessels when their opportunities permit. The functions of the two offices are thus entirely different.

The hydrographic work conducted by the coast survey along our own shores is not a nautical survey, but, properly speaking, a trigonometrical survey, in which the positions of the depths observed, and of rocks and shoals, are determined by the observation of angles upon objects on shore, which are known by the triangulation and topography. The hydrography is closely co-ordinated with these, and cannot be separated from them without losing much of its present excellence.

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#### RECENT CHANGES IN CORNELL UNIVERSITY.

THE growth and prosperity of Cornell university are shown in the measures which its trustees are taking to enlarge and strengthen its faculty. The value of a university lies in its teaching force. Cornell university has been put by its benefactors on a firm financial basis, and the trustees are wisely preparing to employ its increased revenue in adding to its facilities for instruction. The most important of these new measures is the re-organization of the Sibley college of mechanical engineering, with Dr. R. H. Thurston as its direc-

tor. Following this are the measures just consummated and announced, providing for other changes in the faculty. Dr. Wilson, the distinguished and venerable professor of moral and intellectual philosophy, and Professor Schackford, the professor of rhetoric and general literature, are retired at the end of the present year with liberal allowances. A professorship of pedagogy has been established; and Prof. S. G. Williams, now occupying the chair of geology, is appointed to the new professorship. As this is a new feature in our New York colleges, the results of the experiment are looked to with great interest. Professor Williams has had an unusual training for such a professorship. As a teacher in preparatory schools, as a superintendent of schools, and a professor in Cornell university, he has enjoyed an experience which will enable him to put himself in sympathy with those who are preparing themselves for teaching, and to give them whatever aid is possible.

The retirement of Professor Williams from the chair of geology enables the trustees to consolidate the now separate departments of geology and paleontology in one, and to promote Prof. H. S. Williams, who has occupied the latter chair, to the professorship of geology and paleontology. Other changes are either made or contemplated which will still further re-enforce the board of instruction. Not the least important of these changes is the increase in the salaries paid to all the principal professors. The inadequate compensation heretofore allowed has cost the university in several instances the loss of men whom it would have been glad to retain. Two of the professors are to receive \$3,200 each; eleven others, \$3,000 each; and in other cases the stipends have been proportionately increased. S.

#### THE ABBOTT COLLECTION AT THE PEABODY MUSEUM.

THE collection of stone implements made at Trenton, N.J., by Dr. C. C. Abbott, now on exhibition in one of the recently opened rooms of the Peabody museum of archeology at Cambridge, is one of the most important series of the kind ever brought together, and one which archeologists will consult for all time to come. It contains more than twenty thousand stone implements and several hundred associated objects, made of bone, clay, and copper, with several pipes and numerous ornaments and carved stones.

There are several considerations which give the collection exceptional importance. First, it was brought together from a very limited area by a single archeologist; all the specimens having been found by Dr. Abbott upon his own farm and its