THE STUDY OF THE NATURAL SCIENCES.

The development of the natural sciences may be said to be the peculiar feature of the present century. We are all sufficiently acquainted with the benefits which science has scattered with a lavish hand among us, but few of us realize the increasing difficulty of the study, and the need of appliances of every kind to make its development continuous. The study of the natural sciences as a part of a liberal education is a growth not of a century, but, at least in this country, of only a score of years, and many of our college men who were educated 20 years ago in our old-time American colleges have but a faint idea of what the study consists of at the present day.

The study of the natural sciences is useful to the world in more than one way. In the first place, as a means of mental training; next, as a means of increasing the amount of human knowledge; and lastly, as a means of better developing the practical arts. As a means of mental training it is unequaled, since it brings the student face to face with nature, with the forces and the facts of existence. Such an intimate personal contact with the real never fails to stimulate the faculties of the mind. There is no logic so inexorable as that of nature; there is no mental training equal to its conscientious study. In the next place the study of natural science leads, by a process of natural selection, to the development of such students as are fitted by nature for the highest of privileges, the extension of the limits of human knowledge. And finally it is only by the thorough study of science that progress in the practical arts is at all possible.

Now, while all of us admit, in a general way, the importance of this study, there are but few of us who understand at all the many difficulties which surround it. The time was, and was not so long ago but that many of us may remember it, that our single college professor, with his air pump, his electric machine, his crucible and retort, could take in all the sciences, and teach besides, perhaps, a little rhetoric, or moral philosophy. That day is gone, never, we hope, to return. Science has grown so rapidly in the last score of years (thanks to the untiring labors of many heads and hands) that even of the most recent of the sciences no one man is master, much less able to make the proud boast of Von Humboldt that "all knowledge is my province." Science can to-day be profitably studied only with the aid of all the appliances which large laboratories, collections, libraries, and learned professors can furnish.

We have been lead to make these remarks, because we find there is a great deal of misunderstanding upon this subject, even by some of our leading citizens, who, educated in the old way, have been too busily engaged with their professions and business to become acquainted with these facts. There is an important corollary from the above conclusion, that the study of the sciences needs apparatus, collections and instructors for its successful accomplishment. That is, the amount of money which is spent upon institutions devoted to the higher education, is best utilized when it is concentrated upon one worthy institution, instead of being divided among a dozen others, all of which are necessarily of the lower order.

In the latter case apparatus is necessarily duplicated, it becomes impossible for any one to have instructors of proper ability, or to allow them to devote themselves to one department, as is absolutely essential in teaching science at the present day. The only way that we in America can fully realize the benefits which science is ready to bestow upon us, is to follow out as nearly as our different circumstances permit, the idea of the university system which has grown up in Europe. We in California have made a start in this direction. As to our success, we shall speak in an other number.—*Mining and Scientific Press.*

MAJOR POWELL, in his survey south and east of the Grand Canyon of the Colorado, discovered little irrigable, but extensive grazing land.

LUMBER sells at $75 per M. in Bodie, Cal.

COCOANUT PALMS.

The oriental scene represented on this page shows a group of cocoa-nut trees. These trees are found all over the tropical regions; but generally growing within reach of the sea or salt water, and often taking root on sandbanks or thinly covered reefs almost directly after they appear above high water. The tree rises from 60 to 90 feet in hight and affords food, drink, oil, clothing and shelter to the natives. It has a soft fibrous stem marked on its bark by rings. In hot climates every part of the tree is made use of. The natives chew the root as a substitute for the areca; the stems are used as uprights and supports for houses, and for making many domestic implements; the leaves form a thatch or are made into umbrellas, baskets, buckets and lanterns.

THE COCOANUT PALM.

THE TERRITORIAL SURVEYS.—Prof. Hayden and Major Powell have reported to the Secretary of the Interior the general results of their topographical and geological surveys during the past season. The former says: The results of the season's labor, though a short one, has been on the whole very satisfactory. About 12,000 square miles of very difficult country was surveyed—much of it in minute detail—and a mass of observations secured for the twelfth annual report, which will make it of more general interest and value, than any preceding. The Yellowstone Park and the Wind River range of mountains formed a part of the region covered by Hayden's Survey. The work under Major Powell has been prosecuted south and east of the Grand Canyon of the Colorado river. Little irrigable, but extensive grazing lands have been discovered. He reports having collected much ethnological material, and states that he has nearly completed a map showing the distribution of the various Indian tribes within our present boundaries, at dates when they were first known to Europeans.