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No. 994.

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STATISTICS CONCERNING GERMAN TRADE MARKS.

The German manufacturers are not as indifferent as are American manufacturers to the benefits to be derived from the protection afforded by the trade mark laws.

This new law went into effect on the first of October last and resulted in the most wonderful activity in this department of the Patent Office.

During the month of October, 1894, about 8,000 applications for the registration of trade marks were filed in the German Patent Office; 5,950 of these applications related to trade marks which had already been registered under the provisions of the trade mark law of November 30, 1874, the present law requiring all such trade marks to be registered, anew before October 1, 1898, to preserve their validity.

Such a result was entirely unexpected, and the Patent Office officials have their hands full in attending to the great mass of work which is piling up in the office.

ON THE CHOICE OF A CAREER.

There are times in a young man's life when he is beset as to what he shall do for a livelihood, and the question as to a choice between a profession and a technical course is before him. In looking over an experience of nearly fifteen years, it seems as if, notwithstanding the many disappointments in life, there is a greater opportunity for a young man in the field of technology than anywhere else.

If the question were to be put as to what branch of technology offered the greatest opportunities for a successful career, the answer would be, In the domain of technical chemistry. The world is full of men who cannot make a success in any career, and yet they get along somehow. But they are not the ones to whom one should look as examples. Rather study the careers of those who have succeeded and who have overcome the obstacles that have at times impeded their progress. The success of Carnegie in this country and the success of Bessemer in England are well known illustrations of men who have succeeded, but for fear some captious individual may say, "Yes, but that was when times were different," let us take a modern example, one of the immediate present. No one in recent years has so thoroughly made a high reputation for himself as a chemist as H. Y. Castner. Let us examine his career for a short while, and see if there is not something in it that may encourage the young man about to enter upon a technical career. Castner left the School of Mines in 1879 without a degree, and at once devoted himself to the practice of analytical chemistry. An analyst has, unfortunately, but few opportunities of developing his abilities. He does one thing, and the one thing that dozens of men can do, and do equally well. There is no future to that sort of work. This Castner promptly recognized and devoted his leisure to the study of chemical processes. It was not long before he became interested in the manufacture of boneblack, and soon invented a continuous process for making that article. It was a chemical success, but, for reasons that had to do with the economic conditions of the market, it failed to be a pecuniary success. The cheap production of aluminum was then a subject of considerable study on the part of chemists both here and in Europe. Castner examined the ground very carefully, making a very complete study of the literature of the subject, and then set to work experimenting. He soon invented a process concerning which Sir Frederick A. Nobel, in his presidential address before the British Association in 1890, said that it constituted "one of the most interesting of recent illustrations of the progress made in technical chemistry, consequent upon the happy blending of chemical with mechanical science through the labors of the chemical engineer." A unique success was made, and the world heralded the new discovery with applause, but soon electrolytic processes compelled the abandonment of the direct chemical production of aluminum.

The characteristic feature of the Castner process was its method of making sodium, and he promptly turned his attention to that element, creating a demand for it which he supplied. He also called attention to the value of sodium peroxide, which was promptly recognized, and his plant at Oldbury continued in active operation, furnishing at a profit many of the sodium salts. Here we have a career of a chemist who is not yet forty years of age, but who has invented three valuable improvements in existing processes. These inventions, each of which has marked a distinct era in the progress of science, have gained for the inventor a handsome fortune.

More recently Castner has invented an electrolytic process for the decomposition of alkaline chlorides, yielding caustic soda and chlorine, which, according to certain English technical journals, may result in revolutionizing the long accepted Le Blanc and Solvay processes.

It is not necessary to enter upon any discussion of the merit of these inventions. They are cited simply for the purpose of illustrating that opportunities exist around us all the time, which, if promptly seized upon, lead to fortune and reputation.

In no country in the world are the possibilities of a successful career in the line of technical chemistry more evident than in these United States. With the single exception of potassium salts, there is no limit almost to the amount of crude substances existing in nature, capable and ready for use. One single illustration of this fact may be permitted. Candles made from the paraffine contained in ozokerite are considered superior to all others. If the deposits of this mineral that exist in Utah were developed and used for the making of candles, the entire supply required for the region that exists between the Mississippi River and the Pacific Ocean would be at the mercy of the maker. And yet we import candles.

The magnificent soap establishments in Chicago and Cincinnati are striking examples of the growth of enormous plants from very small beginnings. It is for such work that the chemist must educate himself. First he needs an education at some technical school, and there are many of these. In New York City there is the School of Mines of Columbia College; in Boston there is the Massachusetts Institute of Technology; in Chicago there is the Armour Institute; in Golden there is the Colorado School of Mines; and near San Francisco there are the technical departments of the University of California. In any one of these, and they are all good, a young man may prepare himself for just such a career as Castner has made for himself. He must devote himself to the study of principles. These will be of more value than skill in manipulation or a special knowledge of details. It is a great deal better to know how to make any analysis than to be able to make any one single analysis without error.

It is a great deal better to know how to install any factory than to be able to put up one kind of works. With this general idea the student pursues his course until graduation. Places do not come at once, and even sometimes are hard to obtain, but in time the way will open, and then, if the fledgling is able to put into practice the knowledge that he has acquired, there are no heights in the professional world to which he may not soar. Watch your opportunities. If you study the career of any great man, you will find that it was the opportunity that made him. Grant might have remained a tanner in Galena if his opportunity had not come to him with the civil war. If opportunities do not come readily, you must try and force them. No process is perfect so long as it is of human origin. Therefore, select a process, study it, find out its weak point, and endeavor to improve that. In this way your opportunity will come. Find uses for refuse materials. Remember that the refuse of gas works became the source of the aniline colors. Frequently the value of by-products is sufficient to pay for the process. Thus the precious metals obtained in the electrolytic refining of copper enable the smelters of Montana and Arizona to sell refined copper at a price far below that which English smelters can afford. Inspiration and suggestions frequently come from sources that are seldom expected. A poet was once speaking of his valuable reference library. The connection was at first blush not apparent, but it soon transpired that in his descriptions of nature he always verified his fancies by reference to his books. The reason of his having gained the reputation of being a poet true to nature was thus disclosed. His appreciation of a value or an application in something apparently remote from his work showed his genius. So it is in chemistry. The man who is successful will find suggestions when he least expects them, and which, if properly applied, will bring him wealth or that which is better, a high reputation.

Earthquake Waves.

Some of our readers may remember that the pulsations of the great earthquake in Greece last April were perceived in England and, it was believed, at the Cape of Good Hope, by means of very delicate instruments contrived for the purpose of registering any slight shaking of the earth's crust. In like manner the shock of the Constantinople earthquake of July last was perceived at various meteorological observatories in Austria, Russia, Germany, Holland, France and England.

By a comparison of times, combined with the distances from Constantinople of the places where pulsations were observed, a fairly accurate estimate of the velocity with which the earthquake waves traveled was obtained.

The average speed was about two miles per second. This is almost exactly the same velocity as that which was calculated for the pulsations of the Greek earthquake in April. At this rate, if it were continued without diminution, the wave would pass completely round the earth, along a great circle, in about three hours and a half.

One of the English instruments which registered these pulsations is at the bottom of a deep mine near Newcastle on-Tyne, and its delicacy may be judged from the fact that it has recorded the beating of the waves on the sea coast ten miles away.

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