parasitic enemies, whose energies appear to be largely concentrated upon cultivated rubber-trees. The general criticism applied to the treatment of the botanical aspect of the case appears to be justified especially, for example, to the discussion of guayule, a rubber-producing plant with which Americans are more familiar (or perhaps one should say less ignorant). This plant is of peculiar interest because of its preference for the arid conditions of the central plateau of Mexico and adjacent Texas. Indeed, any plant which offers the possibility of using the desert with economic intent may well be thought worthy of special regard. With regard to the process of manufacture of crude guayule rubber the author appears not to be fully informed, but, as the industry is comparatively new, and as a number of methods have had more or less vogue, it is naturally difficult to get exact knowledge, especially at a distance, a difficulty not reduced by the natural effort at secrecy on the part of the manufacturers.

In the discussion of the technical aspects of the rubber industry the author is distinctly at home. Though often brief and summary, he gives the gist of the matter in a very satisfactory way, and this despite the very abstruse nature of the subject. Among the topics presented, to give a brief impression of the scope of the book, are the chemical and physical properties of rubber, its vulcanization, substitutes, reclamation, and the methods of manufacture of various classes of articles from it. It will suffice here to heartily commend the way in which the numerous pertinent details have been handled, since more than a very general criticism would occupy the time of the inquirer better spent in reading the original. As to the orthography, it may be captious to say anything, especially as we (speaking as Americans) have the sympathy of Mr. Terry himself, if we take exception to the English spelling of "tyre."

We may regret that the book is but poorly illustrated, more especially in the pen-drawings of rubber plants. These are hopelessly crude, and behind the times.

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SPECIAL ARTICLES

THE ACCLIMATIZATION OF AN ALFALFA VARIETY IN MINNESOTA

THAT practically none of our many crop plants are indigenous is a matter of common knowledge. Among the numerous agencies that have been instrumental in their introduction immigrants from agricultural areas of the old world deserve more credit than they have hitherto received. Although it is likely that many introductions have been made in this manner, it is rarely possible to trace clearly the history of an individual case. The successful introduction of South American alfalfa into California, to which we owe almost exclusively the present extension of alfalfa growing in the United States, took place about 1855.

In the spring of 1857 another strain found its way into the United States, this time from Europe. In that year there came to this country from the little village of Külsheim, near Wertheim, in the Grand Duchy of Baden, a German farmer named Wendelin Grimm. Like many of his countrymen, Grimm went west, taking up a farm in Carver County, Minn.

Among the few possessions that he brought with him from his old home was a small bag containing less than twenty pounds of seed of the alfalfa or lucerne commonly cultivated in Baden. Grimm applied numerous local names to this alfalfa, but most commonly he called it "ewiger Klee" (everlasting clover) referring to its perennial nature.

This small lot of seed was the progenitor of an alfalfa industry that has existed in Carver County, Minn., for more than a generation and which is now being extended into other parts of the cold northwest.

The South American seed found a congenial soil and climate and became the basis of a farming industry whose annual product has in half a century attained a value of about $150,000,000. The European seed, on the other hand, encountered a favorable soil but a very unfavorable climate, with the result that a long period of years was required for it to become finally established. The original

Grimm alfalfa came from the valley region of Baden, which is said to be one of the warmest and most fruitful districts, not only of Germany, but of Europe; a section in which the almond, walnut and vine flourish. Hence we have in the latter case an instance of the introduction of a valuable crop by an immigrant and also an undoubted example of a high degree of acclimatization brought about by natural selection unconsciously aided by man.

The Minnesota climate is exceedingly severe and during the early years Grimm alfalfa suffered many vicissitudes. Several years ago a member of the Minnesota Agricultural Society, discussing this valuable strain, said:

> When they first commenced to plant it some of them were badly discouraged . . . but finally they made a success of it, and I attribute that success to its having acclimated itself to the country. I can remember that clover growing in this county (Carver), well I should say pretty close to forty years.

Fields between twenty and thirty years old visited by the writer during the past summer have from 10 to 50 per cent. of a stand. Hardy as the strain has become, winters of unusual severity in any particular respect carry the selective acclimatization still farther. Fields examined in the summer of 1905 had suffered considerable losses in stand from the previous winter; fully 50 per cent. of the selected Grimm plants in the nursery at the Minnesota Experiment Station were winter-killed during the same winter (1904–5), while common alfalfa was killed out almost completely.

Wendelin Grimm died eighteen years ago, hence exact details as to his experiences are lacking. Nevertheless, it is apparent that in the early years of his attempt to grow alfalfa in Minnesota he suffered many setbacks. With characteristic German persistence, realizing neither the practical nor the scientific importance of his unconscious experiment in acclimatization, he patiently saved generation after generation of seed from the plants that survived each successive winter, planting new fields to replace the deteriorated ones on his own farm, and selling his surplus seed to his neighbors. He was probably oblivious both to the difficulty of the task he had undertaken and to the great value of the result, and took as a matter of course the yearly degeneration of his stands.

The fact that in its original home in Germany this variety was called upon to bear minimum temperatures less severe than those observed at Albuquerque, N. M., shows what this German immigrant accomplished in the way of acclimatization of alfalfa in Minnesota.

The Grimm strain is one of the hardiest of which we have knowledge. A six-year-old field at Fargo, N. D., has repeatedly endured temperatures lower than 30° F. below zero. It is for this quality that it is so highly prized. It came from a climate little calculated to develop resistance to cold, and as it stands to-day it is undoubtedly the direct product of fifty-one years of perpetuation of fit and elimination of unfit individuals under climatic conditions whose rigors are unknown in Germany.

Charles J. Brand
Bureau of Plant Industry,
U. S. Department of Agriculture,
November 13, 1907

THE CONVOCATION WEEK MEETINGS OF SCIENTIFIC SOCIETIES

The American Association for the Advancement of Science and the national scientific societies named below will meet at the Johns Hopkins University, at Baltimore, during convocation week, beginning on December 28, 1908.

American Association for the Advancement of Science.—Retiring president, Professor E. L. Nichols, Cornell University; president-elect, Professor T. C. Chamberlin, University of Chicago; permanent secretary, Dr. L. O. Howard, Cosmos Club, Washington, D. C.; general secretary, Dr. J. Paul Goode, University of Chicago.

Local Executive Committee.—William H. Welch, M.D., chairman local committee; Henry Barton Jacobs, M.D., chairman executive committee; William J. A. Bliss, secretary, Joseph S. Ames, William B. Clark, R. Brent Keyser, Eugene A. Noble, Ira Remsen, John E. Semmes, Francis A. Soper, Hugh H. Young.