

loosened, and later removed; then the trees are raised and propped up.

#### THE METEOROLOGY OF THE SÄNTIS.

HANN continues his valuable studies of mountain meteorology in a publication entitled 'Die Luftströmungen auf dem Gipfel des Sântis und ihre jährliche Periode' (*Sitzungsber. Wien Akad. Wiss., math. naturwiss. Kl.*, CXII., Abth. IIa, 1903, pp. 42), the Sântis being one of the most important mountain observatories of Europe. Fifteen years (1886-1900) of hourly observations of wind are discussed in detail, and compared with similar records at lower levels. In winter the mean wind direction is northeast; in summer nearly due west; in autumn (September-November) south to southeast. Southwest is the most frequent wind direction.

#### SOUTH AFRICAN METEOROLOGY.

SOUTH AFRICAN meteorology is beginning to make encouraging progress. Three recent papers, by J. R. Sutton, have been published in the *Transactions of the South African Philosophical Society*, Vol. XI., Part 4, and Vol. XIV., Parts 1 and 2, under the titles 'Some Pressure and Temperature Results for the Great Plateau of South Africa,' 'Results of some Experiments upon the Rate of Evaporation' (at Kimberley) and 'An Elementary Synopsis of the Diurnal Meteorological Conditions at Kimberley.' Mr. Sutton, who is already known for previous meteorological work at Kimberley, is in charge of the meteorological station of the De Beers Consolidated Mines.

R. DE C. WARD.

#### THE MISSOURI BOTANICAL GARDEN.

ADVANCE proofs of the fifteenth administrative reports on this institution, which have been received from its director, show customary growth and activity. In 1903 \$27,272.48 was expended in maintaining the garden itself; \$3,085.69 was spent on the herbarium; \$4,239.85, on the library; \$5,325.98, on the office; \$967.68, on research; and \$1,307.87 for the training and care of garden pupils. For improvements of the grounds and buildings \$1,954.35 was spent; a fire-loss to the plant

houses and collections led to the expenditure of \$2,033.40; \$481.17 was spent on the preparation and equipment of a phyto-chemical laboratory, and the cost of publications was \$1,849.16.

The director's report combines a summary of progress for the past five years with the details for 1903, and the liberal use of coordinate curves makes the growth in all departments evident at a glance. An inventory at the end of the year showed that 11,357 distinct species or varieties were then in cultivation, an increase of 41.8 per cent. for the last five years. The visitors for the year numbered 79,039, and their distribution by months forms an interesting curve of seasonal out-of-door life in St. Louis. The herbarium now contains 465,205 specimens, valued at \$69,780.75. Of these, 37,408 were incorporated last year, and the growth for the last five years amounts to 51.3 per cent. of the number reported at the end of 1898. The library contains 42,262 books and pamphlets in nearly equal numbers and 311,218 index cards, and is valued at \$74,472.90. Its growth for the last five years is shown to be 27.7 per cent. The serial publications now received number 1,185, an increase of 27.4 per cent. over the number received five years ago.

The continued use of the equipment of the garden for research by its employees is noted, and the statement is made that "in every feasible way the library, herbarium and living collections are made useful to investigators, whether connected with the institution or not: when they can be used on the spot, every possible facility for their use is given visiting botanists: when this is not possible they are sent to trustworthy persons or institutions, when their safe return is guaranteed; and, except for specimens or books of especial value which could not be replaced in case of loss, or those in constant use, the garden has always stood ready to place its library and collections for a reasonable time at the disposal of botanical departments of colleges, or of capable investigators not having official connection with the centers of learning."

Small but satisfactory results are reported in the Shaw School of Botany, through which

in 1903 two candidates earned the master's degree, and one, the doctor's degree, in Washington University, in which one candidate for the former and three for the latter are now enrolled with majors in botany.

Details are given of the workings of the school of gardening, the organization of the office staff, and the gardening operations for the past year; and the report closes with an account of the special testamentary provisions of the founder of the garden, among them the recent banquet of the trustees, at which several hundred of the scientific men of the country were guests during the last convocation week.

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*THE DEPARTMENT OF ECONOMICS AND  
SOCIOLOGY OF THE CARNEGIE  
INSTITUTION.\**

THE Department of Economics and Sociology of the Carnegie Institution was by the action of the executive committee placed wholly in charge of Carroll D. Wright, commissioner of labor. The first great work to which this department is to address itself is the preparation of an economic history of the United States, embracing eleven subjects:

(1) *Population and Immigration*.—To this branch Commissioner Wright has assigned Professor Walter Willcox, of Cornell University. Professor Willcox will not treat his subject merely on its statistical side, but will deal broadly with such questions as the influence of the movement of population and immigration on the economic development of the country, one of the principal features to be considered being the routes that immigration has taken at various stages.

(2) *Agriculture and Forestry*, including public land and irrigation interests. To this work Mr. Wright has assigned President Kenyon L. Butterfield, of the Rhode Island Mechanical and Agricultural College.

(3) *Mining*.—This is committed to Edward W. Parker, of the Geological Survey.

(4) *Manufactures*.—This subject will be handled by S. N. D. North, director of the United States Census.

(5) *Transportation* will be considered by Dr. W. Z. Ripley, of Harvard University.

(6) *Domestic and Foreign Commerce*, including fisheries, is in the hands of Professor Emory R. Johnson, of Pennsylvania University.

(7) *Money and Banking* will be considered by Dr. David R. Dewey, of the Massachusetts Institute of Technology.

(8) *The Labor Movement* has been reserved by Commissioner Wright for himself.

(9) *Industrial Organization* is the subject assigned to Professor J. W. Jenks, of Cornell University.

(10) *Social Legislation* will be treated by Professor Henry W. Farnam, of Yale University. He will include in his study provident institutions, poor laws, and kindred topics.

(11) *Federal and State Finance*, including taxation. The authorship of this treatise the department is not yet ready to announce.

The collaborators will utilize all available material that has been published mostly in fragmentary ways, as well as all material that can be secured from original sources by special research. For this purpose, graduate students and others interested in special lines will be employed. It is impossible to state how long it will take to finish the work, but it will be pushed with all the force compatible with accuracy and completeness. The allotment of money for the first year is \$30,000.

As has been said, Commissioner Wright has been put in charge of the entire enterprise, and during the present year he will have the direction of the work of the staff from the office of his department at Washington. After this year, when he will have retired from the Department of Labor, he will direct the work from his new seat of activity in Worcester, Mass.

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*SCIENTIFIC NOTES AND NEWS.*

THE twenty-fifth anniversary of the conferring of the doctorate on Dr. Wilhelm Ostwald was celebrated at Leipzig on December 19. A *Festschrift* has been prepared by his pupils.

PROFESSOR F. W. PUTNAM has resigned his position in the American Museum of Natural History which he has held for nearly ten

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\* From the New York *Evening Post*.