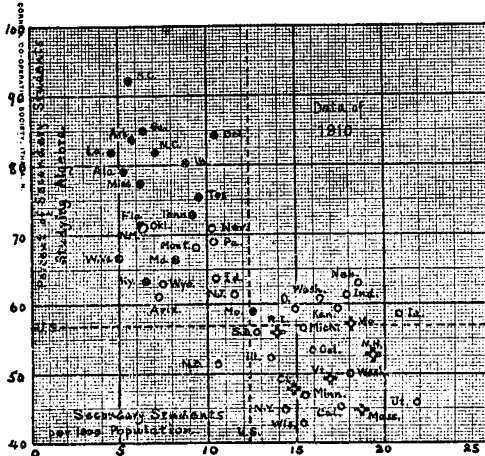


is small, there the proportion of secondary students pursuing algebra tends to be large. One is reminded of Booker Washington's remark about the freedman's penchant for studying Latin and holding office—but the



black dots on the chart represent mainly white education.

The method of this last chart may be applied as well to other studies and to the percentage strength of the various years of the course, all of which are shown to be more or less strongly related to the number of students per thousand of population. An attempt to correlate these statistics with urban congestion has, however, failed, as urban density so crosses state educational systems, and counts for so much more in some states—as Rhode Island—than in others, that a satisfactory disentanglement of the relations is practically impossible.

I would draw one general conclusion from this study. Our impressions of secondary—and other—education are strongest as they are derived from our own experience as students. Most college and university men, even those who have the closest relations with the work of the secondary schools, have done little actual secondary school teaching, and hence are very likely to be strongly under the influence of impressions received twenty, thirty or more years ago. Such impressions are, how-

ever, nearly valueless as guides in dealing with the present situation. The tabular and graphical representations of statistical facts show at a glance that since 1890 the problem of the secondary school has changed from that of the fitting school to one of a decidedly non-fitting school—some bigots would say a decidedly *unfitting* school; a school in which only 6.8 per cent. of the pupils anticipate college work of any sort. This being the case, the colleges and universities can not lead the way in the fashion of 1892 and the Committee of Ten; the problems of secondary education can be solved only in the schools.

WILLARD J. FISHER

ITHACA, N. Y.,  
June, 1912

#### SCIENTIFIC NOTES AND NEWS

THE American Society of Naturalists will meet at Cleveland on January 1 and 2, 1913. The session on January 1 will be given to the reading of papers on genetics, and that of January 2 to a symposium on adaptation. The annual dinner, open to members of the affiliated societies, will be held on the evening of the second, with the president's address by Professor E. G. Conklin.

THE American Society of Zoologists will hold a joint meeting of its eastern and central branches in conjunction with the meeting of the American Association for the Advancement of Science at Cleveland, Ohio, during convocation week. Notice of this meeting, together with a request for the titles of papers to be presented, will shortly be sent to all members. Communications from members of both branches should be addressed to Professor Winterton C. Curtis, University of Missouri, Columbia, Mo., the secretary of the Central Branch, since the constitution provides that "the meetings of the societies shall be arranged for and conducted by the officers of that branch in whose territory the meeting is held." The president of the Central Branch during the current year is Professor Henry B. Ward, of the University of Illinois, Urbana, Ill.

A JOINT meeting of the American Anthropological Association, the American Folk-Lore Society and Section H of the American Association for the Advancement of Science will be held in Cleveland, Ohio, on December 30, 1912, to January 4, 1913. Titles of papers to be read and abstracts of the same should be sent by December 1 to Professor George Grant MacCurdy, Yale University Museum, New Haven, Conn., who is responsible for the joint program.

THE Association of American Universities will hold its annual meeting at the University of Pennsylvania on November 7, 8, and 9, 1912.

PROFESSOR BERGSON, of Paris; Professor De Vries, of the University of Amsterdam, and Sir William Ramsay, of London, have been appointed Woodward lecturers at Yale University.

DR. FELIX KRUEGER, professor of philosophy and psychology at Halle, who is this year's Kaiser Wilhelm professor at Columbia University, delivered his inaugural lecture on October 29. His subject was "New Aims and Tendencies in Psychology."

PROFESSOR EMILE BOREL, director of scientific studies at the École Normale Supérieure and professor of the theory of function at the University of Paris, will lecture at Princeton University on November 6.

PROFESSOR JORGE ENGERRAND, of the City of Mexico, has been designated honorary professor in the New University of Brussels. The Mexican government has appointed him to the directorship for 1912-13 of the International School of Archeology and Ethnology, recently founded in the City of Mexico. In this latter capacity Professor Engerrand's work will deal largely with the antiquity of man in America and especially from the geological standpoint.

PROFESSOR JOHN E. SWEET, formerly professor of practical mechanics in Cornell University, was eighty years old on October 21, and some of his former students gave him a banquet at the Onondaga Hotel in Syracuse on that night.

DR. MAZYCK P. RAVENEL, head of the state hygienic laboratory at the University of Wisconsin, has been appointed first lieutenant in the medical reserve corps of the United States Army by President Taft.

AT the Nutrition Laboratory of the Carnegie Institution Dr. Raymond Dodge, professor of psychology at Wesleyan University, Middletown, Conn., has been appointed consulting experimental psychologist, and an especial laboratory has been equipped for his investigation. Dr. Sergius Morgulis, Sheldon fellow of Harvard University during the year 1911-12, and who has engaged in investigation in the laboratory of Professor Zuntz, of Berlin, has been appointed associate in animal metabolism.

M. F. SMITH, B.S. (Yale, '97), has been appointed assistant astronomer at the Yale University Observatory.

DR. CHARLES PORTER SMALL, who has been the university physician since the founding of the University of Chicago, has resigned to devote his entire time to private practise.

AT the last meeting of the Rumford Committee of the American Academy of Arts and Sciences a grant of \$250 was made to Mr. W. O. Sawtelle, of the Jefferson Physical Laboratory, Harvard University, in aid of his research on the spectra of the light from the spark in the oscillatory discharge.

PROFESSOR WM. T. MAGRUDER has resumed his duties as head of the department of mechanical engineering in the Ohio State University after a year's leave of absence. Professor Magruder spent a considerable part of the year in travel through Europe, investigating the trades schools. He has recently been elected president of the Society for the Promotion of Engineering Education.

THE Rev. José Algué, director of the Manila Observatory, P. I., is now in this country and is making his headquarters at Georgetown University, of whose observatory he was formerly director.

DR. KRUSIUS, dozent at Marburg, has undertaken, with the support of the Prussian and

Bavarian governments, a ten-months' trip to foreign countries, to repeat on different races the investigations on myopia in the schools which he began some time ago in the province of Brandenburg.

MR. S. W. FOSTER, who for the past six years has been engaged in deciduous fruit insect investigations for the U. S. Bureau of Entomology, is now engaged in the research and applied work on the Pacific Coast with headquarters in San Francisco.

MR. ROBERT C. MURPHY is in charge of an expedition to the South Georgia Islands, under the joint auspices of the Museum of the Brooklyn Institute of Arts and Sciences and the American Museum of Natural History.

DR. ROLLIN D. SALISBURY, head of the department of geography and dean of the Ogden Graduate School of Science in the University of Chicago, went into camp about October 1 at Lake Nahuel Huapi, Patagonia, in the eastern Andes in latitude  $41^{\circ}$ . On his return he expects to stop at Rio de Janeiro and go back into the interior from that point to the great iron deposits of Brazil. Professor Salisbury will resume his work at the University of Chicago at the opening of the winter quarter, 1913.

DR. W. J. G. LAND, assistant professor in the department of botany at the University of Chicago, has sailed from San Francisco for a collecting trip in the islands of the southern Pacific. His course includes the Hawaiian, Tonga and Fiji Islands, and Australia. The object of the trip is primarily to observe and collect liverworts, and incidentally to collect interesting forms of other plant groups.

At the meeting of the Minnesota Pathologic Society at the university on October 15, the annual address was delivered by Dr. Ludvig Hektoen on "Recent Observation of Streptococci and the Streptococcal Infection."

"PROBLEMS of the Modern City" is the subject of a series of lectures being given by present and former professors of the University of Chicago in Fullerton Hall, of the Art Institute, Chicago, from October 15 to December 17. The course was opened by J. Paul

Goode, associate professor of geography, who spoke on "The Dynamics of the City: Its Geography and Transportation." Robert Franklin Hoxie, associate professor in the department of political economy, followed with a lecture October 27 on "The Development of Industry and the Social Problems of a City." "The Health of the City" was the subject of a lecture by Edward Oakes Jordan, professor of bacteriology, on October 29.

LAST year there was a decrease in the production of tungsten ore owing to the decrease in the demand for tool steels, in which the bulk of the tungsten produced is used, according to Frank L. Hess, in a report on this metal just issued by the United States Geological Survey. The production of domestic tungsten ore in 1911 amounted to 1,139 short tons of concentrates, carrying 60 per cent. of tungsten trioxide, valued at \$407,985; in 1910 the production amounted to 1,821 short tons, valued at \$832,992. Tungsten is used chiefly in making steels that will hold their temper when heated, but it is most generally known as supplying the filament of tungsten incandescent lamps. The great improvements in drawing tungsten wire and further notable improvements in the size of the globe of the tungsten lamp and in other mechanical details that add greatly to its efficiency are making it encroach upon the carbon-filament lamp and the arc lamp, and it is rapidly driving from the market the tantalum lamp, which was the first good incandescent lamp having a metallic filament. Diamonds are used for dies in drawing tungsten wire. At first it did not seem possible to drill small enough holes through the diamonds to make wire sufficiently fine for lamps of small candlepower, but wire 0.0006 inch in diameter can now be drawn in quantity. The total quantity of tungsten ore used for electric lights, however, amounts to only a few tons a year. New uses of tungsten, in making electric furnaces, electric contacts and targets for Röntgen rays, have been developed, and the last two products are being actively manufactured.