across was the dominant size, with apparently few less than one half inch in diameter.

Much of the hail was of peculiar form as well as of uncommon size. The smaller stones were spherical to subspherical, and had a frosted appearance. Some were markedly discoidal with a frosted nucleus surrounded by relatively clear ice. This nucleus exhibited clearly in many specimens concentric layers of clear and frosted ice surrounding a more or less frosted core. This type of hail attained a maximum diameter of one inch or slightly more. The larger stones had a different form, characterized by fantastic outlines and unequal diameters. Many had the appearance of a mass of small pieces of hard candy that had stuck firmly together. Others resembled a group of blunt crystals studding a portion of the wall of a geode. Still others consisted of an irregular solid mass with more or less cylindrical, bluntly spinose projections up to one half inch long and one eighth inch thick.

These bizarre large hail appeared to have resulted from several small stones becoming frozen together during their formation and descent, with the interstices perhaps filled with added ice. The rounded outlines of some of the individual stones could be observed, and were brought into relief through melting. The spinose projections on the masses of aggregated stones are inexplicable by the writer, for they showed no trace of a composite nature, but appeared to have formed as distinct homogeneous projections.

ARTHUR BEVAN

DEPARTMENT OF GEOLOGY,
UNIVERSITY OF ILLINOIS

THE NEW YORK STATE FORESTS

IN SCIENCE for November 2, 1923, resolutions passed by the executive board of the American Engineering Council advocating abolishing the constitutional protection of the New York state forests were printed.

The citizens of that state have invariably voted down that proposal in whatever form it has been presented, and recently they did so again by a decisive majority. This is not because any intelligent person is opposed to scientific forestry or the proper use of the power resources of that region. It is because there exists no machinery in the state government to insure the continued application of any system of real forestry to those lands if they are opened up to commercial exploitation, and because the laws and the constitution do not appear to provide any safe and reliable means for establishing any. The forests would be in charge of officials whose term of service would be likely to end after the next election, and if a good administration saved any of the forest, it would only be for the bad one following to make away with.

That until the problem of the continued proper administration of those forests is solved, any breaking down of their present constitutional protection means their destruction is a fact so self-evident as to require no discussion. The resolutions ignore this completely.

People familiar with the Adirondack and Catskill regions will be curious to learn where the "great volume of ripened timber" that is stated to be decaying away is located.

The increasing practice of securing the indorsement of prominent scientific and professional organizations for schemes and proposals without the members having knowledge or understanding of the things they are represented as approving is an evil that can not fail to affect adversely not only the organizations, but the public's respect for scientific opinion.

WILLARD G. VAN NAME

NEW YORK CITY

THE PROFESSOR AND HIS WAGES

WHILE in other circumstances I might hesitate to trespass on your columns to the exclusion of more important matter than controversy, self-defense is an excuse which makes even trespass lawful. It is a pity that Mr. Welsh read my letter with so little attention before he started to answer it, and rebuke me for "theorizing without that judgment and knowledge of 'how much' that only experience in the field dealt with teaches."

Item, he accuses me of overestimating the rewards of the business man in my little table of comparison with the professor: "The profits assumed for the merchant are much beyond the average." Quite so! If Mr. Welsh will reread my letter he will find the words "Admitting that not all merchants are as successful as Mr. Smith . . ." I specifically stated that I was comparing two unusually successful and competent men, one in business, the other in teaching. If Mr. Welsh supposes that the *average* college professor gets $4,000 a year, or that the average teacher ever obtains a professorship in any large institution, he will find little confirmation in the various studies of university, college and secondary school conditions made by the Rockefeller and Carnegie Foundations.

Item, he accuses me of dismissing "quite lightly" the risk of capital in business, a point on which I laid particular stress: "The rewards of the entrepreneur are and should be higher than those of the salaried man because his risks are greater. . . ."

Item, Mr. Welsh justifies the higher incomes of businessmen on the ground that they are a selected class and the "average professor should not be compared with the successful businessman but rather with the latter's employees." Which reminds me strongly of my own statement that "we need not assume that the average instructor or professor is as

able as a captain of finance." The ablest professors in the country would be overjoyed to have a salary equal to that of the higher and more competent business employees, the factory managers, expert salesmen, etc. But by "employees" Mr. Welsh seems to mean "clerks," for in his final sentence he ranks the merit of the average professor below that of the average clerk. That would put the young instructors and the secondary school teachers level with the office boy, and as for the primary teachers would not a German mark be overpayment?

But grant everything Mr. Welsh says. Suppose that the great majority of our faculties are made up of "unselected" weaklings or incompetents who "get all they are worth to the community." The real point remains. Is Mr. Welsh content that such men, cheap men bought for an unskilled laborer's wages, should instruct *his* children? Or is he willing to raise the price and get better men? Or does he consider science and scholarship so unimportant that they can be confidently entrusted to an inferior type of human being?

PRESTON SLOSSON

ANN ARBOR, MICHIGAN

A WARNING TO MICROSCOPE USERS

FROM personal experience the writer wishes to warn both the microscope user and manufacturer of the danger of the projecting corrugated rim of the ordinary microscopical eyepiece as an agent for producing an epithelioma in the region of the orbit. This applies especially to the binocular microscope, where it is almost impossible to look through the microscope without scraping a piece of nasal epithelium with the eyepiece. Can any other procedure, if repeated day after day for year after year, be any more favorable for the production of an epithelioma on the side of the nose?

WM. F. ALLEN

UNIVERSITY OF OREGON MEDICAL SCHOOL

SCIENTIFIC BOOKS

Mankind at the Crossroads. By E. M. EAST. 8vo., viii + 360 pp. New York, Scribners, 1923.

WE have here a book on "Population" by a biologist. It is devoted to the discussion, in a general way, of the quantity and quality aspects of the population problem.

The argument of the book is to the effect that: (1) Certain processes in present-day civilization are dysgenic due to the fact that it is made easy for inferior types to breed more rapidly than superior types; (2) the present rate of increase of the white race will bring it up against food barriers in about fifty years; (3) many parts of the world—particularly those inhabited by the brown and yellow races—are already so filled that but little further increase can take place; (4) the sensible thing for us to do in the light of these facts is to undertake a thoroughgoing control of population growth, both for the purpose of preventing deterioration in the quality of the stock, and in order to keep numbers down to the point where man may have time and energy for something besides extracting a meager living from the soil.

After a short introductory chapter calling attention to the urgency of population problems, Professor East opens his argument proper by exposition of the biological principles which must be kept in mind in any discussion of population. It is interesting to note that he—a genetic specialist—is far less dogmatic on the question of the inheritance of acquired character than most biologists. "Everything is relative," says the author, and with that belief one can not very well be dogmatic on such a matter. "For all practical purposes," however, the possibility of the inheritance of acquired characters can be disregarded.

His statement of the way in which racial traits have probably developed and the likely results of race crossings is of fundamental importance to the social scientist; while the explanation of the significance of the mechanism of heredity is of great interest and importance to everyone. These facts of heredity urge more potently than any emotional appeal, care in selection of mates. And yet one is not made to feel that breeding superior stock is the sole aim of life, as many eugenists seem to think. After showing that we now have sufficient biological knowledge to enable us to maintain our stock at its present level of ability or, even to improve it, the author wonders whether we have the ability to apply this knowledge.

The rest of the book may be looked upon as an effort (very successful in the reviewer's judgment) to prove that we must undertake in a definite manner to control population growth in the light of clearly established biological principles, and in the light of our knowledge regarding the food supply, if we are not come to grief in the near future. A brief review of population opinions held in the past is followed by a statement of the growth of population in the world to-day, and what this means in terms of increased production of food. The author comes to the conclusion that three times the present population of the world will use up all tillable land, and that when there is this population, the standard of living will be about the equivalent of that of the peasants of western Europe. At our present rate of increase, it will take about a century for population to triple. But, Professor East shows that within about fifty years that part of the world open to Europeans will be so filled up, at present rates of increase, that pressure will become keen and the positive checks—famine, disease, war—will become operative. The chapters on