world to make a thorough and organized anthropological study of this interesting and little-known group.

H. E. G.

LECTURES BY PROFESSOR LORENTZ AT THE CALIFORNIA INSTITUTE OF TECHNOLOGY

The following is the provisional outline of the extended course of lectures on "Light and matter" to be delivered by Professor H. A. Lorentz, of Haarlem, Holland, during the winter quarter at the California Institute of Technology at Pasadena:

Older theories of light. Maxwell's theory. Maxwell's equations.
Propagation of light in ponderable bodies.
Huygen's principle.
Interference phenomena. Professor Michelson's methods.
Propagation in a dispersive medium.
Group velocity.
Which is the velocity that is determined by the measurements?
Considerations on (special) relativity.
Fresnel's coefficient.
Momentum, energy and mass.
General considerations on the constitution of electrons, atoms and molecules.
Models of the atom. Thomson, Rutherford, Bohr.
Theory of quanta.
Parson's electron. Lewis's and Langmuir's atom.
Bohr's theory.
Principles of correspondence.
Atoms in stationary states not radiating.
Emission of light. Long trains of waves. Interference with high differences of phase. Structure of spectral lines. Broadening by Doppler effect and other causes.
Scattering of light by molecules.
Dispersion of light.
Anomalous dispersion. Application to solar atmosphere.
Gravitation. Propagation and emission of light in a gravitational field.
Constitution of solid bodies. Atoms held together by electric forces?
Heat motion in crystals.
Magnetism. Theories of diamagnetism and paramagnetism.
Einstein-effect.
Magnetization by rotation.
Quantum theory of the Zeeman effect.
Inverse Zeeman-effect. Older theory. Phenomena observed in the direction inclined to the lines of force. Application to the sun's magnetic field.

In addition to the Lorentz lectures, which will be delivered four times a week from January 4 to March 10, Professor Paul Epstein will give a course on "The origin and significance of the quantum theory."

The California Institute of Technology extends a cordial invitation to investigators in physics, and to teachers in universities, colleges and high schools who are able to do so to attend without charge the Lorentz and Epstein lectures, which will be delivered from 4 to 6 P.M. in the main lecture room of the Norman Bridge Laboratory of Physics.

It is probable that before his return to Holland in April Professor Lorentz will spend a week at the University of Chicago and also at several other universities of the West and Middle West.

THE SECRETARYSHIP OF SIGMA XI

Professor Henry B. Ward, of the University of Illinois, who has been secretary of Sigma Xi since 1904 and has been in large measure responsible for the national development of the Society, writes in the *Sigma Xi Quarterly:*

Two years ago when the quarter-century of service terminated, I made an especially urgent appeal that the work be passed to someone else. Just at that time, however, the society was emerging from the chaotic condition in which all organizations found themselves after the war, and a new project had just been started which bade fair to arouse interest and develop stronger support than any new plan which the society had developed since the earliest years of its history. It was clear to the president and to the members of the fellowship committee, who were intensely interested in this new movement, that a new man could not possibly take up the work of the secretary's office without embarrassing very seriously, and delaying or perhaps fatally injuring the campaign for the establishment of Sigma Xi fellowships. Accordingly, I reluctantly consented to carry the work for one more term, with the positive understanding that my resignation, to take effect in December, 1921, would be final. Under these circumstances, I may be par-