CORONAGRAPH

Ready, for an attack not on an airplane but on the problem of physical conditions on the sun. This first coronagraph in the Western Hemisphere is to be erected in Colorado this summer.

PHYSIOLOGY

Reveal Scandinavian Blood In Veins of Scotch

SCOTTISH and northern English soldiers fighting in Norway have blood of Scandinavian ancestors in their veins.

Taking advantage of Britain's wartime preparedness in which large numbers of people have had their blood typed for emergency transfusions, Dr. R. A. Fisher of the Galton Laboratory at Rothamsted and G. L. Taylor of the Galton Laboratory Serum Unit at Cambridge report that they have been able for the first time to study the distribution of blood types throughout Great Britain's population.

Scottish blood is similar to that of Iceland's people, descended from Scandinavian Vikings, the scientists report. (*Nature,* April 13.)

Modern Norwegians and Swedes are, in fact, far less Viking in their blood type, a fact which is attributed to the blending of central or eastern Europeans into Scandinavia's population since Viking days.

Science News Letter, May 18, 1940

ASTRONOMY

World's Highest Astronomical Observatory To Be Established

At Fremont Pass, Climax, Colorado, Astronomers Will Have Their Clearest Look at the Sky

THE WORLD'S highest astronomical observatory will be established in the Rocky Mountains in Colorado this summer by Harvard University. It will be located at Fremont Pass, Climax, Colorado, at an altitude of 11,318 feet. The object of the high elevation is to obtain the clearest possible sky, one free from dust and other air particles which can completely upset these delicate observations.

Major purpose of the station will be to make regular observations of the sun's corona or pearly halo, usually visible only at the time of a total eclipse when the moon shuts off the sun's brilliant light. The studies will be made with a coronagraph, a new instrument which creates artificial solar eclipses for astronomers.

This is the first coronagraph in the Western Hemisphere and only the third in the entire world. It will not immediately entirely replace astronomers' familiar junkets to far-off lands to study natural eclipses, for there are some studies for which the instrument is not adapted, but it should provide a mass of badly needed material, especially day-to-day records.

Dr. Donald H. Menzel of the Harvard Observatory, who is in charge of setting up the new station, expects the day-to-day studies of the solar corona to be important not only theoretically but also practically, for it should enable the forecasting of such violent and widespread electrical storms as that which crippled the world's communication services on Easter Sunday this year.

Observations of such solar activities as sunspots, solar prominences and the corona, and of the inter-relationships of these phenomena, should also lead to a better knowledge of physical conditions on the sun and the influence of these on earth, Dr. Menzel said.

The Harvard coronagraph employs the same principle as that invented by the French astronomer, Dr. Bernard Lyot, and used by him for observations from a station in the Pyrenees. Fundamentally, it is a special type of telescope in which an appropriate screen masks out the bright solar image, thus creating an artificial eclipse of the sun.

All telescopic lenses must, of course, be free of the slightest flaws, but exceptional care has been taken with the ones for the coronagraph, for the tiniest imperfection would be sufficient to scatter light and obscure the faint corona. This gaseous envelope of the sun is only half as bright as the moon, a millionth as bright as the sun, and is, of course, completely obscured under normal circumstances by the sun's own brilliance.

A special feature of the Harvard coronagraph will be the treatment of the lenses with the "invisible-glass" technique developed at the Massachusetts Institute of Technology by Dr. C. Hawley Cartwright, to reduce reflections and scattered light. (See page 314)

The station will also be equipped with a powerful spectrograph for the study of the spectrum of the corona. Motion pictures will be used to study solar prominences and also the corona in an effort to learn how this peculiar structure changes from day-to-day.

The station will be built on the property of the Climax Molybdenum Company, through whose cooperation it has been made possible. Harvard already has stations at Oak Ridge, Mass., and Bloemfontein, South Africa.

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RADIO

Billion Dollar Sales Forecast for Television

FOR research on television to date $25,000,000 has been spent, according to a survey made by Dr. Orestes H. Caldwell, editor of *Radio Today*. Of this, RCA-NBC spent $10,000,000. For research during 1940, the estimate is $4,000,000, of which half is by RCA-NBC. When and if television reaches development corresponding to the present radio development Dr. Caldwell foresees $1,000,000,000 annual sales volume, 3,500,000 sets sold annually and 500,000 new jobs created.

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