

SCIENCE IN ESPERANTO TAUGHT AT EDINBURGH

In connection with the 18th Universal Esperanto Congress to be held at Edinburgh from July 31 to August 7 on international summer school with all courses given in Esperanto will be held.

Science, medicine, folk lore, linguistics, and international law are the branches of learning in which courses will be offered. Among the professors of various nations who will lecture in the international tongue are Prof. Collinson of the University of Liverpool, Prof. Bujwid of the University of Cracow, Dr. Pascal Deuel of Leipzig, Dr. E. F. Fournier d'Albe and the Italian R. Orengo, Dr. Stromboli of Pisa, and Mr. Tarelli of the International Labor office in Geneva.

THE SUN A VARIABLE STAR; NEW EVIDENCE BY NEW METHOD

The sun is a variable star. This central fire of the planetary system does not glow with a steady heat but flickers from day to day and from year to year, and the vagaries of our earthly weather must depend at least partly on the sun's variations. This opinion, which has been supported for many years by Dr. C. G. Abbot of the Smithsonian Institution, finds new support in evidence produced by a new system he has devised for measuring and recording the changes in the energy reaching the earth from the sun,

Dr. Abbot calls attention to the work of H. H. Clayton, who has announced that he finds variations of weather caused by solar changes. But many meteorologists have not been convinced that the sun really varies. They fear that the complicated measurements of Dr. Abbot, hindered as they are by the haziness and humidity of the earth's atmosphere, are not conclusive. The variability which he reports, they suggest, may all be due to unavoidable atmospheric sources of error.

Dr. Abbot now announces a very direct test that should settle the question. Although it is impossible to do the measuring from a point outside the atmosphere, yet it is possible to select times when the transparency and other affecting qualities of the air are closely alike, and the sun stands at equal height above the horizon. At such times the solar heating should vary only if the sun does.

Selecting the month of July in the years 1910 to 1920 for his test, he collected results observed on Mount Wilson for all days of practically constant atmospheric conditions. The average monthly values thus selected he compared with those obtained by the usual process and heretofore published. He also compared them with the average monthly numbers of sun spots. The three curves that express his results run along very closely together. They show that the sun's heating in July 1917, averaged over 2 per cent. above that of Julys, 1910 and 1911. Correspondingly, the sun spot numbers were 117 in July, 1917, and only 14 and 3, respectively, in Julys, 1910 and 1911.

Not content with this proof of the reality of long-range solar changes, Dr. Abbot rearranged the measures in a way to test short-interval solar variation. For this purpose he picked out from the new data all the days that gave high values of solar heating, and all those which gave low ones. The average excess value for