

ond spot would replace the first in relation to the earth. If the first spot gave rise to emission of ions, radially, which in its orbital motion the earth reached and in which it became enveloped, the aurora of May 13 was possibly the result. The same relation repeated a day later by the second spot replacing the first would account for the aurora of May 14.

The relation of the two auroras in time, and the sequence of spot positions on the revolving sun are significant to say the least.

In this connection it may be noted that the great aurora of March 22, 1920, had a very long and unusual duration, beginning early in the evening of that day and continuing all night, even being observed just before sunrise on the 23d. It may have continued during part of that day, invisibly of course. At that time an examination of the solar surface disclosed a remarkably elongated spot area or chain of spots, and at each end of the chain or elongated group was a well-marked rounded spot. The group was fairly uniform in width extending in a direction nearly parallel to the solar equator, and its length would amply account for the long continuance of the aurora if emanations were pouring out from the whole group as it revolved with the sun. Moreover, its advance past the meridian of the sun was apparently much the same before the aurora as with the two spots believed to have caused the auroras of this year on May 13 and 14. Such an advance points to a period (several hours possibly) required for the ionic emanations from the spot area to traverse the radius of the earth's orbit, from the sun.

Another matter of interest may be mentioned. In many auroras, especially during the greater outbursts, there occurs at times the peculiar streaming upward, as if a luminous wave was running up toward the zenith crown; a sort of flaming effect. The motion is fairly rapid, perhaps one half second being required to traverse the length of the streamer. The point I wish to make is that the apparent velocity of this wave-like luminosity upward seems to be constant in all auroras that I

have witnessed and in which it was possible to make an estimation. This should be confirmed or denied by measurement, for those streamers which bear the same relation to the observer, as variations in distance away may affect the result.

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SWAMPSCOTT, MASS.,
May 16, 1921

THE LANDSLIDE NEAR MONT BLANC

THE *March Bulletin* of the Royal Italian Geographical Society contains an account, well illustrated with map and photographs, by Professor U. Valbusa of the landslides near Mt. Blanc which occurred on the 14th and 19th of November last and made much stir in the newspapers, even to the point of exciting fear that the round-topped "monarch of mountains" had lost some of its height (4,807 meters). Such was by no means the case, as the head of the slide was on the eastern side of the subordinate dome known as Mt. Blanc de Courmayeur (4,709 m.), two kilometers east of and nearly 500 meters lower than the main mountain dome. Granite rock masses about half a square kilometer in total slanting area, were dislodged from the oversteepened side of an east-facing spur, the top of the gray slide-scar being a little lower than the terminal point of the spur which has an altitude of 4,381 meters. The detached rock masses first slid down into a second-order cirque of small size between the spur of origin and the Aiguille blanche de Pététret, near by on the southeast; there they turned a short distance northeastward and descended from the hanging outlet of the small cirque to a level of about 3,200 meters on the Brenva glacier at the western side of the great first-order cirque in which this glacier gathers its névé branches, and from which a narrower glacial tongue cascades southeastward into the over-deepened trough—locally known as the Allée blanche—of the uppermost Dora Baltea. On reaching the main glacier beneath the small cirque, the slide turned to the right, and gathering ice as it rushed along spread over the whole 3-kilometer breadth of

the glacier at the cirque front, even dashing a little upward on the opposite mountain side; and then, rushing down the steep glacial cascade where it cut off séracs and clogged crévasses, it divided on the convex surface of the lower glacier and overran both lateral moraines but failed to reach the mid-extremity of the tongue on the floor of the Allée blanche. The total distance traversed by the slide was about 8 kilometers according to the map, but only 5 according to the text; the total descent was from altitude 4,300 to 1,500 meters. The time of descent of the first slide on Nov. 14, as estimated by eye witnesses, was between 2 and 3 minutes; the velocity of movement was the greater because winter snows had not yet fallen on the ice in the great cirque. The volume of the slide was roughly estimated at between 4,000,000 and 5,000,000 cubic meters. Dust of rock and ice was spread by the wind blast of the slide, right and left of its course on the glacier and the mountain flanks, for a width of a kilometer or more; trees were overturned by the blast outside of the lower lateral moraines; a temporary lakelet was formed where the right lower branch of the slide, crossing the trough floor and ascending a little on the farther side, obstructed the Dora Baltea. The slide was evidently one of those spasmodic efforts by which the Alpine mountain faces, over-steepened by glacial sapping, try from time to time to regain more moderate slopes, such as they had in Preglacial time; but the volume of the fallen rock was but a trifling fraction of the spur from which it was detached.

W. M. D.

EXTRA-MUNDANE LIFE: A COMMENT

TO THE EDITOR OF SCIENCE: In discussing the highly speculative subject of intelligent life in other worlds it is well to keep in mind two serviceable precepts of scientific reasoning: First, failure to prove that A is B is not a proof that A is not B . Thus, failure to furnish evidence that other worlds are inhabited by intelligent creatures is not to be construed as proof that such extramundane life does not exist. Second, of two discordant

propositions: A is B ; A is C ; one of which must be true and for neither of which any evidence is forthcoming, we are intellectually bound to accord hospitality—not adoption but hospitality—to the one which is marked by the greater likelihood. Viewed without anthropometric bias this earth is, as we know, one of the less important members of the system to which it primarily belongs—a system dominated by a single undersized yellow star. If we had a time word corresponding to the space word *parsec*, and also had more definite geological knowledge of the past and future duration of this planet, we might express quantitatively the fact that the human race is relatively a mere episode in the history of the planet itself; while our increasing knowledge of the Milky Way with its encircled disk of stars must convince us that our solar system is, in turn, only an incident in the history of the stellar system to which it belongs. Which is more probable, that this one insignificant planet is the only world in which creatures capable of feeling and knowing have originated and developed, or that multitudes of other worlds have afforded both conditions and cause for life, including intelligent life, and are the homes of beings of both physical and mental parts. The latter supposition seems to be invested with incomparably greater likelihood.

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May 22

SCIENTIFIC BOOKS

The Health of the Industrial Worker. By EDGAR L. COLLIS and MAJOR GREENWOOD, containing a chapter on Reclamation of the Disabled by ARTHUR J. COLLIS and an introduction by SIR GEORGE NEWMAN. London, J. & A. Churchill, 1921.

The appearance of the first English book on industrial hygiene could not have been more happily timed. With a combination of an industrial depression and a glutted labor market there is a widespread tendency among American managers to scrap the elaborate personnel machinery established during the war—"to safeguard the health and capacity of the