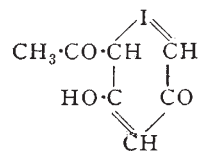


From an altitude of 12,000 ft. it could be plainly seen like a large empty irrigation canal, stretching away for ten miles to the south until it was lost in the dust haze. Indeed, so permanent are the dislocation features in the desert regions that those produced during the earthquake of 1857 are still plainly visible. Mr. Willis thus concludes that the aeroplane can be used with advantage as a means of rapid geological reconnaissance in mapping large structural features.

In an article on rudder pressures and Airship R38, *Engineering* of November 11 it is pointed out that our information as to the actual forces operating on a ship when its rudder is in use is extremely limited and indefinite. In light structures such as those of airships it is therefore necessary to allow a more generous factor of safety for the structural portions which have to withstand these forces than for any other portion of the structure the straining action of which is more definitely known. It is possible to arrange the weights in an airship relative to the buoyancy, so that the shearing forces and bending moments operating on the structure as a whole may be reduced to very small amounts. If, however, more efficient control is required, and especially for movements in the horizontal plane, larger forces on the structure are involved, and the framing must of necessity be stronger. It is from airships that more definite information as to the actual pressures on rudders and other control surfaces can be obtained,

since the actual pressure at various points can be measured simultaneously without much difficulty. Certain information on this point has already been obtained, but has not yet been published.

IN the October issue of the *Journal of the Chemical Society* Prof. J. N. Collie and Miss A. Reilly describe the preparation of a new type of iodine compound. This is obtained by the action of iodine on the barium salt of diacetylacetone, and appears to contain iodine in the ring. The formula attributed to the compound is



On solution in water the iodine atom takes up the elements of water and becomes quinquevalent.

"THE Legacy of Greece," edited by R. W. Livingstone, which is shortly to be published by the Oxford University Press, aims at giving an idea of the debt of the world to Greece in various realms of the spirit and intellect, and of what may still be learned from her. The chapters most likely to appeal to readers of *NATURE* are Biology, by Prof. D'Arcy W. Thompson, Mathematics and Astronomy, by Sir Thomas Heath, Medicine, by Dr. C. Singer, and Philosophy, by Prof. J. Burnet.

Our Astronomical Column.

THE LEONID METEOR SHOWER.—Mr. W. H. Denning records that this display proved rather a feeble one this year, and that very few of the meteors were seen. Miss A. Grace Cook, of Stowmarket, watched the sky for 3½ hours on the very clear, frosty morning of November 11, and recognised six Leonids out of a total number of twenty-five meteors seen. The radiant point was in the usual position at 150+22°. Several other observers maintained a vigilant watch on the same date, but saw very few Leonids, though some brilliant objects were recorded from the minor showers of the period. There were radiant points in Taurus, Auriga, Cancer, and Ursa Major.

A NEW SUGGESTION TO EXPLAIN GEOLOGICAL CLIMATIC CHANGES.—Dr. Harlow Shapley contributes a paper on this subject to the *Journal of Geology*, vol. 29, No. 6. He has lately been observing the seventy variable stars in or near the Orion nebula, finding that they belong to various spectral types, and that their light-curves are peculiar, showing no regular periodicity, no extreme range of variation, and little resemblance to other known light-curves. He supposes that the changes are due to collision or friction with the nebulosity. He then notes that the motion of the sun is nearly straight away from the nebula, and that, assuming the distance as 600 light-years, the sun was in its neighbourhood some 9,000,000 years ago, in which case a variation of from 20 to 80 per cent. of the total light and heat may readily have taken place, more than enough to explain any of the changes postulated by geologists. He makes the further interesting notes that long-exposure spectrograms with the 100-in. reflector show the bright lines

of hydrogen, nebularium, helium, carbon, and nitrogen; and that they also show a faint continuous spectrum in all parts of the nebula. This last fact makes the difference from the spectra of the spiral nebulae one of degree rather than of kind.

STAR CATALOGUES.—There have been extensive additions to published catalogues in recent months. Greenwich catalogues cover the zone 24-32° N. decl., and also the northern circumpolar region. The Astronomer Royal contributed a paper to the meeting of the R.A.S. on November 11, dealing with the proper motions of the latter catalogue. He showed that Drift I. was very strongly indicated, while Drift II. could be traced, but was much less conspicuous, as its apex was not far distant from the region of the catalogue. The Cape Observatory has issued a catalogue of the stars in the Backlund-Hough list, which was drawn up with the idea of covering the sky with a fairly uniform network of stars the places of which were to be well determined. Both Greenwich and Cape observations indicate a surprisingly large correction to the equinox previously employed; this correction has not yet been introduced into the Greenwich catalogues, but the Cape catalogue adopts the value -0.048s., deduced from observations of the sun, Mercury, and Venus. The cause of the correction is obscure; some part of it may be due to the introduction of the travelling-wire method of observing transits.

Washington Observatory has also published a catalogue of fundamental and zodiacal stars. It is particularly desirable to have the latter well observed, since they are employed to fix the positions of the moon and planets.