sounds rather bad; but"—and he smiled confidently and made a large gesture with his open hands—"we'll make something new that you'll have to have." It was a fine confidence, and characteristic of the wonder-worker who had all his life been making "something new."

VERNON KELLOGG
NATIONAL RESEARCH COUNCIL,
WASHINGTON

THE AURORAL DISPLAY OF SEPTEMBER 18

ON the evening of September 18, shortly after eleven o'clock and continuing until after twelve, there was the most unusual manifestation of aurora borealis at Fargo that we have ever witnessed. It consisted of an intensely luminous band some five degrees in width, extending through the zenith from one horizon to the other. The eastern end was some fifteen degrees south of east and the western end a corresponding distance north of west. The band was very uniform in width and intensity, though somewhat wider and more intense at the zenith. It had the general appearance of an intense shaft of light from a powerful searchlight, except for its direction and position. At the same time there was a considerable manifestation of aurora at the north, but between that and the band spoken of there was no illumination.

We have never had our attention called to a like phenomenon and we are wondering if it was observed at other points.

C. B. WALDRON

AURORAL DISPLAYS AND THE MAGNETIC NEEDLE

IN connection with the auroral displays of August 11 last, mentioned in these columns on August 22, it may be of interest to mention the behavior of the magnetic needle at Omaha at the time. The wire chief of the Western Union Telegraph Company called me by telephone that morning and said that there was very considerable and unusual trouble with earth currents over the wires between Chicago and Cheyenne as far south as Kansas City. Upon this notification I began to observe the behavior of the magnetic needle. I have two fine needles about 4 inches long, one in a transit with a full circle, and the other in a plane table with a range of only 5 degrees on either side of the zero. As the first trembled too much on account of the mechanical vibrations of the floor of the room, I confined my attention to the second. I saw the north end of the needle first creep a few degrees to the west, and then by slow stages advance as far as five degrees to the east. Although I kept myself as motionless as possible, I saw the needle swing violently to the west, the full range of the case, through an arc, therefore, of more than 10 degrees, so that it rebounded by its impact against the side. This was at about 5 P.M., Summer Central Time.

A double track electric railway ran north and south about 150 feet to the east of the needle. At almost its nearest point there is a break in both trolley lines, serving as a division point between two sections. This meant that the current supplied over the trolley to the cars was suddenly interrupted whenever the cars came to this division point. I watched the needle very closely at these moments to see whether this feature might account for its oscillations, but could not find the least connection. The next day the needle was as quiet as if it had been riveted to its case.

WILLIAM F. RIGGE

QUOTATIONS

SCIENCE AND THE PRESS

Is it possible for the newspaper press to be a useful intermediary between the investigator and the public? Mr. Chester H. Rowell, a well-known American journalist, discussed the question at the recent Pacific meeting of the American Association for the Advancement of Science. Neither here nor in the United States can there be any doubt as to the advantage of widespread knowledge of the methods, the objects, the results, and the personalities of science. Even during the war we suffered much from misapprehension of these. Science was called on to produce, and did produce, magical results as a conjuror produces rabbits from his sleeve. There was no appreciation of the long training, the elaborate

apparatus, and the skilled methods required for these feats. And too often the specifications of the inventions were amended by ignorant officials, and their application entrusted to unskilled persons. Such costly errors can be avoided in the future, and the requisite support given to the deliberate pursuit of science, only if the nation generally learns to understand and sympathize with scientific men and scientific work.

Mr. Rowell is confident that the popular press is indispensable for any general contact with a wide public. He offers advice, based on American conditions, as to how such a result may be accomplished. He distinguishes between the daily newspapers and the Sunday newspapers. The latter vehicle is less sharply marked off in this country than in America, Germany and Vienna, where the vast bulk of the Sunday issues overwhelms those who make first acquaintance with them. Mr. Rowell says that it is necessary to "print an excessive amount of reading matter, to float the advertising." The news will not go round, and so, as a desperate resort, the editors have recourse to literature, science, and the arts. Scientific men are given this friendly advice: the Sunday papers will take anything, even science. But entrance to the columns of the daily newspapers is another matter. That goes by merit. The test of merit is that the "copy" is news. There is no hope, says this expert, of getting things printed as news because they are "useful or useless, beneficial or injurious." "The eternal verities are not news, though a temporary or adventitious fact regarding them may be." The reference, we repeat, is to conditions in the United States, but they may be worth noting by the English public, who are more responsible for the contents of the newspapers they read than they perhaps realize.—The London *Times*.

SCIENTIFIC BOOKS

Starfishes of the Philippine Seas and Adjacent Waters. By Walter K. Fisher. United States National Museum Bulletin 100. Washington, Government Printing Office. 1919. Pp. xxi + 712, 156 pls.

For several years, students of echinoderms have been awaiting with some impatience the appearance of Fisher's complete report on the sea-stars collected by the *Albatross* in the East Indian region, between December, 1907, and December, 1910. Several preliminary papers have appeared, in which most of the novelties were described, but it was well understood that the full report would be a monograph of the greatest importance to the morphologist and zoogeographer as well as to the systematist.

This expectation is wholly justified by the present volume, with its wealth of illustration and its ample discussions of structural and taxonomic problems. The brief preface, besides the customary acknowledgments for help received, recounts the chief facts as to number of species collected, the number of novelties and the new genera and subgenera represented. An introduction of some twenty pages gives a brief historical sketch of our knowledge of Philippine sea-stars and then plunges into a detailed analysis of the distribution of the species and the relationships of the fauna. There is a very large amount of zoogeographical material presented here, but the obvious criticism may be made that the treatment is too exclusively analytical. Probably, in view of the fact that the large and highly important material collected by the *Siboga* in the Dutch East Indies is as yet but partially studied, Dr. Fisher felt that any conclusions drawn from the *Albatross* material alone would be premature and almost certainly liable to revision. The introduction closes with two pages of analysis of the composition of the *Albatross* collection and one wonders why this is placed at this point rather than in connection with the similar data presented in the preface. Following the introduction is an important list of the sea-stars of Celebes and the Moluccas, with the authority given for each record, and then is given the list of *Albatross* stations at which sea-stars were taken.

Examination of this station list reveals some interesting facts. The largest number of species taken at any one station was *nine*