against the belief, formerly held by some, that this phenomenon is due solely to local conditions.

Here the broad central arc formed low in the northern sky, its highest point being about 20° above the horizon and identical in direction with our magnetic north. It first appeared about 8 P.M. and was then most pronounced (though without definite form) in the northwest. In color the light consisted chiefly of white, yellowish green, and dull red but was at no time very bright, though its varied radial streamers attracted much attention. Its maximum was reached about 10 P.M., when it advanced beyond the zenith to a point about 60° above the southern horizon and covered the major portion of the sky.

JOHN E. SMITH

IOWA STATE COLLEGE,
AMES, IOWA,
March 18, 1918

ON the evening of March 7 there occurred at La Crosse, Wisconsin, the finest display of northern lights that the writer has ever seen here. There seems to be no record or remembrance of any equal display. The lights were observed more or less from 7:30 till 12 P.M. The best were seen from 9:45 to 10:45 P.M. During this time shafts of light starting from the horizon would shoot to the zenith. These shafts would be in the north, northeast, or northwest. After these started, others would follow them till three fourths of the heavens were covered with these shafts of light, for they extended south of west and south of east. In the parts of the heavens farthest south the shafts of light were broken just below the zenith but in the other parts of the heavens the shafts were continuous from the horizon to the zenith. The shafts did not flicker or flash as observed at other times but they remained stationary for a period and then died out.

The most remarkable thing was the colors exhibited. After the shafts had been established faint tinges of red appeared which became brighter till the heavens from the northwest to the northeast, and for three fourths of the way from the horizon to the zenith were covered with a bright crimson red glow. The scene was magnificent and never to be forgotten.

The above light forms would stay for some minutes and then they would all die away and leave only a greenish hue in the north. In a few minutes more all would be repeated again. This repetition was noted several times in succession till about 10:45 it all faded into the greenish hue which lasted an hour.

Other colors were observed as yellows and purples. These were seen as faint light toward the zenith but the prominent color was the red which with the definitely formed shafts gave a special character to these northern lights which will be easily remembered by the observers.

G. H. BRETNALL

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## AN OLD RECORD OF ALBINO TURKEY BUZZARDS

THE appearance in SCIENCE at intervals during the past two or three years of accounts by various observers of albino birds has interested the present writer very much, and all the more because he has never been so fortunate as to see such a bird. Recently while reading the voyages of Captain William Dampier, his attention was forcibly called to the account by this keen-eyed explorer which is given herewith in the belief that it may prove of interest and value to some of the readers of SCIENCE.

Carrion crows are blackish Fowles, about the Bigness of Ravens; they have bald Heads and reddish bald necks like Turkeys. . . . These live wholly on Flesh (and are therefore called Carrion Crows). . . . Some of the Carrion Crows are all over white, but their Feathers look as if they were sullied: they have bald Heads and Necks like the rest; they are of the same Bigness and Make; without any Difference but in Color; and we never see above one or two of these white ones at a time; and 'tis seldom also that we see a great Number of the black ones, but that we see one white one amongst them. The Logwood-Cutters [of Campeachy] call the white ones King-Carrion Crows.

This account is found on page 168 of Volume II. of the 1729 edition of Dampier's "Voyages" as edited by John Masefield and

published by Richards in London in 1906. Specifically the account is found in Dampier's narrative of his "First Voyage to the Bay of Campeachy" which is dated 1676. Dampier was, of all the early English ship captains and circumnavigators, by far the keenest observer. His "Voyages" fairly bristle with the most interesting and valuable natural history notes, and it seems not improbable that if they were better known they might constitute his best bid for fame. His text seems to indicate quite clearly that these "Carrion Crows" are our well-known "Turkey Buzzards," and if so it may be that this is the first and possibly the only recorded occurrence of albinos among them.

E. W. Gudger

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Greensboro, N. C.

### AN OPEN LETTER

*My dear Professor Jeffrey:* In your delightful volume (excuse the word, but it expresses my feeling) on Woody Plants, you make a division of Archigymnospermæ and Metagymnospermæ on the basis of pollen chamber, fertilization by motile sperms, and presence of cryptogamic wood. In other places you show the close relationship of Cordaitales, Ginkgoales and Coniferales. Could you explain briefly, in this journal, for the benefit of many who will undoubtedly be interested, why you split the gymnosperms between the Ginkgoales and Coniferales rather than between the pithy stemmed Cycadean series and the woody Cordaites-Ginkgo-Conifer series?

Sincerely yours,

Henry S. Conard

*Dear Professor Conard:* Your open letter has been submitted to me by the editor of Science. My motive in dividing the Archigymnospermeæ from the Metagymnospermeæ on the basis of the presence of antherzoid fertilization and cryptogamic centripetal wood is largely one of expediency, since there are fortunately almost no gaps in the series of vascular plants outside the very considerable one which separates the Angiosperms from the Gymnosperms. The cryptogamic wood (or the *bois centripete*) has been an important criterion for the lower gymnosperms since the days of Renault and Brongniart. Zoidogamy, predicted by Hofmeister for the lower gymnosperms and discovered in the Cycads and Ginkgo by Hiarase Ikeno and Webber is a prominent character on the gametophytic side. The combination of these two accepted criteria makes the line of separation come above the Ginkgoales. The large pith and large leaves which you emphasize were also possessed by many Cordaitean forms. Some of these had leaf bases very fern-like in organization, as described by Dr. D. H. Scott and myself in remains from the lower Waverly of Kentucky. I would repeat that the term Archigymnospermeæ is one of convenience, and like most scientific terms falls short of covering the situation. I would quite agree with you that the Ginkgoales are fully as closely allied to the Coniferales as to the Cordaitales, yet convenience and the present state of our knowledge includes them with the ancient gymnosperms. I may add that your "Cycadean Series" appears to me to be a very natural one, and in fact is generally admitted. Hoping I have made my position clear I remain,

Yours sincerely,

E. C. Jeffrey

## SCIENTIFIC BOOKS

*Studies in the History and Method of Science.* Edited by Charles Singer. Oxford, Clarendon Press, 1917. xiv + 304 p. 4°, XLI plates (many colored), 33 illustr. in text.

As Sir William Osler tells us in the introduction to these essays, they are the outcome of a quiet movement on the part of a few Oxford students to stimulate a study of the history of science. Upon the generous initiative of Dr. and Mrs. Charles Singer, a bay has been set apart in the Radcliffe Camera of the Bodleian for research work in this field. The objects pursued are: first, to place at the disposal of the general student a collection that will enable him to acquire a knowledge of the development of science; secondly, to assist the special student in research: (*a*) by placing him in relationship with investigations already undertaken, (*b*)