

### A Novel Interrelationship in the Triterpene Group

WE have elsewhere described the isolation of a diethenoid alcohol,  $C_{30}H_{50}O$ , accompanying  $\beta$ -amyirin and lupeol in the non-saponifiable fraction of shea nut oil<sup>1</sup>. We have now found that this alcohol, for which we propose the name *basseol*, is very readily cyclized by a variety of reagents to  $\beta$ -amyirin. This reaction is, we believe, the first example of the conversion of a naturally occurring tetracyclic triterpene to a likewise naturally occurring pentacyclic triterpene. It is of considerable biological importance in that it supplies an experimental realization of one stage in the natural evolution of a pentacyclic triterpene from presumably an acyclic structure of the squalene type by means of stepwise cyclizations.

A full account of this investigation will be published shortly.

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Nov. 19.

<sup>1</sup> Heilbron, Moffet and Spring, *J. Chem. Soc.*, 1583 (1934).

### Radio Fadings and Bright Solar Eruptions

WITH reference to the three recent large sunspots reported in *NATURE* of December 5, p. 965, it is of interest to note that on December 3 a bright hydrogen eruption was observed at the Royal Observatory, Greenwich, to take place near one of them which was at the time  $55^\circ$  west of the sun's central meridian. The region in question was under observation with the spectrohelioscope (using the hydrogen line of the solar spectrum,  $H\alpha$ ) at 11<sup>h</sup> 46<sup>m</sup> U.T., when a minor bright eruption was seen to be in progress. At 11<sup>h</sup> 57<sup>m</sup> a recrudescence of activity began, and by 12<sup>h</sup> 03<sup>m</sup> the bright hydrogen eruption had become as bright as the continuous spectrum 4A, from the centre of the  $H\alpha$  line. At 12<sup>h</sup> 18<sup>m</sup>, cloud unfortunately intervened, but from previous experience it is known that the average duration of the major bright eruptions is 30–45 minutes.

The chief interest of the present solar eruption is that a marked abnormality in the ionosphere affecting radio transmission was reported to the Royal Observatory as having occurred on the same day from 12<sup>h</sup> 12<sup>m</sup> until 12<sup>h</sup> 42<sup>m</sup>.

In a memorandum issued by the Astronomer Royal on December 1, it is pointed out that, from a preliminary comparison of twenty-three marked radio fadings and bright solar eruptions recorded during the twelve months, July 1, 1935–June 30, 1936, eight radio fadings occurred during the actual observation of bright eruptions on the sun. In addition, two fadings occurred when a bright eruption was listed as having been seen some minutes later to be already in progress, although its time of origin was not observed owing to cloud or some other circumstance. Of the remaining thirteen radio fadings, in one case the sun was not under observation at the time, and in twelve cases it could not be ascertained from the international solar data (published in the Zurich solar *Bulletin*) whether any solar eruption was observed at the respective times—the sun being actually under observation—or whether, owing to cloud, observations were impossible.

The memorandum proceeds to point out that since nine or ten marked radio fadings were closely associated in time with bright solar eruptions (the expectation of chance coincidences being less than two, if solar eruptions of all intensities be considered and almost negligible if the proportion of the more intense solar eruptions, appropriate to the twenty-three radio fadings, be taken into account), a definite correlation is suggested between the two phenomena, the relationship appearing to depend on a rapid transmission of some solar agency travelling with a speed approaching that of light.

It is suggested that in future the published international solar data should be still further extended, so as to provide the additional information as to whether at the time of any marked radio fading the sun was actually under observation at one or more of the observatories equipped with spectroheliographs and spectrohelioscopes.

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### Natural Selection

IN reply to Prof. MacBride's letter in *NATURE* of November 21, p. 884, may I just say that, both by my distinguished predecessor and myself, the study of as many specimens as possible has been recognized as of the first importance, and that is done not only at Oxford but also by visits to the British Museum (Natural History) and to Lord Rothschild's wonderful collection at Tring: indeed I was there yesterday.

The study of geographical variations, as we have so often emphasized, plays a leading part in the subject of mimicry; and, to paraphrase my friend's words, if he really wishes to know how the evolution of a mimetic pattern proceeded, let him come to the museum at Oxford. There he will see hundreds of *Papilio dardanus*, and all stages of evolution of the sundry mimetic tail-less forms of female from the tailed, male-like form.

I do not attempt to meet Prof. MacBride's arguments about mutations because, as I said in *NATURE* of October 17, they should be answered by more competent hands than mine.

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### Professional Associations of Scientific Workers

THE leading article in the issue of *NATURE* dated November 14 directs attention to the limited scope of most professional associations of scientists and emphasizes the need for one which concerns itself with the social aspects of science. The Association of Scientific Workers has for many years tried to fulfil this function, as reference to its policy will show. "The main objects of the Association are to promote the interests of the Scientific Worker and to secure the wider application of science and scientific method for the welfare of society."