

ment, settlement, and spurt—and in most factories probably of more. Examples from some of the publications of the Industrial Fatigue Research Board show the disadvantages of the ten-hour as against the eight-hour working day, and also the improvement resulting from suitably arranged rest-pauses. The author points out, however, that a certain amount of fatigue is not only inevitable, but also beneficial; it is when the fatigue cannot be dissipated by rest that the condition is serious and the work suffers. The difference between the work of a machine and that of a human being is emphasised; it is unnatural for the latter to maintain a uniform output hour by hour. It is also necessary for industry to recognise the importance of individual differences among workers. Dr. Myers concludes by referring to the work of the Industrial Fatigue Research Board and of the National Institute of Industrial Psychology, which latter continues and develops the more general work of the Board for special firms. Although these bodies have been working but a short time, their researches have clearly shown the very complex nature of industrial fatigue problems and the urgent necessity for scientific investigation by impartial workers.

SIXTY-ONE pages on the growth of the antenna in termites might be thought disproportionate, but Mr. C. Fuller has made a really interesting study (*Annals of the Natal Museum*, vol. iv., p. 235, November, 1920). The number of segments in the antenna has, as in other insects, been held to distinguish various species, and even the length of the basal segment, numbered III., has been taken as diagnostic. But when soldiers of one species from a single colony were found with antennæ ranging from seventeen to

nineteen segments, this practice clearly called for re-consideration. It now appears that the segments are produced by separation from this segment III., and normally two at a time. The two segments of a pair may fuse or the proximal element may not be separated from III., and in this way arise antennæ with an odd number of segments. The relative length of III. depends on the number of segments that have been separated from it. The variation of number is governed by a general tendency to reduction throughout the group and by various environmental factors, of which nutrition is the most important. All antennæ, even in the adults of the most fully developed species, show within segment III. un-separated segments, and are therefore arrested organs. This gradual and continuous response to the environment in a segmented organ has an obvious bearing on theories of evolution, and Mr. Fuller's paper deserves study by general biologists. Fortunately, it is well arranged and well written. But we do not like the words "quiescency" and "monolocular"; we do not understand how "acrogenous" can apply to growth in a proximal region; and we protest against the use of the anatomical term "joint" when "segment" is intended.

MESSRS. NEWTON AND CO., LTD., 37 King Street, Covent Garden, W.C.2, have recently prepared a set of lantern-slides for a lecture on "Wireless Telegraphy" dealing more particularly with the Elwell-Poulsen system. The slides, many of which are from hitherto unpublished photographs, are accompanied by a full set of notes, which provides alternative methods of treatment for audiences of varying degrees of acquaintance with the subject.

### Our Astronomical Column.

THE DATE OF EASTER.—A Bill to fix the date of Easter as the second Sunday in April has been introduced into the House of Lords by Lord Desborough. This Bill may serve to focus attention on the matter, but it is scarcely likely of itself to do more, for the question is one that calls for international and ecclesiastical co-operation, as was recognised by the Astronomical Union when it appointed Cardinal Mercier to preside over the Commission on Calendar Reform. Isolated action would only increase the present inconvenience, and obviously a Parliamentary decision would not be accepted by a considerable section of the community in such a matter as the alteration of the date of a religious festival.

ANCIENT STAR MAPS.—Dr. M. Schönfeld contributes an article to *La Nature* for February 5 on pre-historic astronomy in Scandinavia. He reproduces some old rock sketches found at Bohuslän, Venslev, and Dalby. They appear unmistakably to be intended to represent several notable star groups, Ursa Major being repeated three or four times, while Boötes, Virgo, and Cassiopeia are also more or less roughly delineated. It would appear that these designs are not *very* many thousands of years old, as several sketches of men and animals accompanying the star groups indicate that the constellations were already mapped out substantially as we now know them. The Bull, Archer, Great and Little Dog, and the ship Argo can all be traced. Moreover, Arcturus

moves through  $0.6^\circ$  in 1000 years, and while the sketch of Boötes is too rough to assign a date to it with any accuracy, we can at least say that it is unlikely to have been drawn more than 10,000 years ago. Dr. Schönfeld claims that different sketches represent the sky at different seasons of the year, but he seems to overlook the fact that unless we know the approximate date of the drawings we may be several months in error through the effects of precession.

THE 1920 OPPOSITION OF MARS.—*Popular Astronomy* for February contains very interesting drawings and photographs of Mars made at Flagstaff Observatory last spring, together with articles by E. C. Slipher and G. H. Hamilton. The aspect of Syrtis Major was very unusual, considerable sections of it being covered by a white veil, apparently cloud or mist. It was noted that this white region was not surrounded by a dark band, as was the polar cap; and it is concluded that the latter band is not illusory, as some have contended. Mr. Hamilton notes that the Syrtis appeared normal until March 8, and was then modified in two different ways. Besides the partial covering by white cloud, the south-eastern edge of the Syrtis appeared to fade and merge into the adjacent desert. Both Mr. Hamilton and Mr. Slipher refer to the veiling by mist near the limb which is a familiar feature, but at the recent opposition the mist seems to have persisted an unusually long time after sunrise.