

the proposal, to which in the first instance I think the reform should be confined.

Astronomers are apt to ask, *Cui bono?* But though the advantages of such a simplification would to them be small, they would be enormous, innumerable, and universal to the lawyer, the statesman, the banker, broker, &c.—indeed, to public business, commerce, and education in all civilised countries.

If without infringing any scientific principle or violating any religious symbolism benefits so general can be conferred so easily, I feel sure that scientific men will not stand in the way. Indeed, many of them are in the forefront of the movement.

What we want is a simply natural and naturally simple scheme. I am afraid that suggested by your correspondent—very ingenious as it is—is for that reason unsuited for general use.

The Mary Acre, Brechin, N.B.

ALEX. PHILIP.

FROM Mr. Philip's letter it appears that he, at all events, is conscious of the grave difficulties in the way of interrupting the continuous succession of the days of the week. It would be idle, therefore, to argue this point further, or to insist in greater detail on the importance of what Laplace called "peut-être le monument le plus ancien et le plus incontestable des connaissances humaines" (la semaine).

The date of the Crucifixion depends on questions relating to the Jewish, not the Christian, calendar. Now it seems incredible that the Hebrew communities have failed to maintain the order of the Sabbath without a break. If this be granted, the only deduction to be drawn from Mr. Philip's argument is that the Crucifixion did *not* occur in the year 31; which, indeed, according to the most recent chronological view, is most highly probable.

Mr. Philip's argument in favour of equalising the months will be received with interest when it appears. When, however, it is realised that the suggested change will not give us a fixed calendar, it may be doubted whether this minor adjustment, free from objection as it may be, will be found to have the necessary driving force behind it to secure its adoption.

H. C. P.

#### A Zenith Rainbow.

AN interesting rainbow was visible from the Bruges-Ostend canal here at 4.30 p.m. on April 17, in fair weather, almost due west.

The sight at once evoked the expression that the bow was inverted. It was clearly visible for several minutes, and subtended an arc of about 20°.

On shielding the eye from the direct light of the sun, this arc was seen to extend much farther, and formed part of a circle with the zenith as apparent centre, the radius of the circle being estimated from 10° to 15°.

The inside of the bow was violet, the colour following the usual order to red; the intermediate colours were, however, not characterised by the sharpness often seen in the ordinary rainbow.

The state of the sky at the time was misty near the horizon, but otherwise brilliant with high fleecy clouds, with a light wind from N.N.W.

The bow was backed by a thin broken cloud, which presented a "curtain" formation as far as the angle of the sun.

No rain was observed to fall at the time or during the day. No primary or secondary bow was visible, which, among other things, excludes the idea of the bow observed being a tertiary one.

It would be interesting to know whether this type of bow is of frequent occurrence.

K. C. KREYER.

7 rue des Lions, Bruges, Belgium, April 18.

It appears from Mr. Kreyer's description that the phenomenon observed was the upper arc of contact of the halo of 46° radius. The altitude of the sun was about 24° at the time, so that the height of the point of contact would be about 70°, and the centre of the arc, accepting your correspondent's estimate of 10° or 15° radius, would be at an altitude of 80° to 85°. The phenomenon is described by Pernter as the most beautiful of all halo phenomena, and it occurs often when no trace of the 46° halo is

visible; the colours, with the exception of the violet, are definite and brilliant, with the red towards the sun. The violet seen by your correspondent is more rarely present. The cloud with "curtain" formation was probably cirro-stratus, and would be formed by the ice crystals which give rise to halo-phenomena.

The bow observed is not of frequent occurrence (about seventy had been observed up to 1883), and it is interesting to have a record of it.

E. GOLD.

Meteorological Office, South Kensington,  
London, S.W., April 27.

#### Daylight Saving!

THE following aspect of the Daylight Saving Bill does not appear yet to have been noticed.

A man who is accustomed to rise at 9 a.m., lunch at 1.30, dine at 7.30, and go to bed at 11.30 will naturally object to turning out of bed an hour earlier on a dull, grey, cold April morning. So, when the clocks are put forward, he will consider that the change is only nominal, and will continue to follow the old hours, rising at 10, lunching at 2.30, dining at 8.30, and going to bed at 12.30. When, however, the clocks are put back the weather is getting bad, and the pleasantest part of the day is after the blinds have been drawn and the gas lit; he will be glad of the extra hour's sleep in the dark morning, and the increased fireside comfort in the evening, and will be so accustomed to regard 10 o'clock as the time for getting up, 2.30 as lunch time, 8.30 as dinner time, and 12.30 as the time for going to bed, that he will certainly not want to go back to the old clock reckoning. Thus "daylight saving" will mean a saving of an hour's daylight in the dark winter months and a gain of an hour's gas-light.

"THE VOICE OF THE SLUGGARD."

#### DAYLIGHT AND DARKNESS.

WHATEVER may be thought of Mr. Willett's so-called daylight-saving scheme, it is impossible not to admire the persistence with which he pursues the idea, and secures support for it from city corporations, town councils, chambers of commerce, members of Parliament, and other people who are attracted by the advantages offered, and do not realise how unscientific the scheme is, or the gravity of the objections to the adoption of a variable standard of time-reckoning. We do not believe for an instant that the Government is likely to give facilities for legislation on the lines of the Summer Season Time Bill, however sanguine the promoters of the Bill may be. As, however, a meeting at which the Lord Mayor presided, and the Home Secretary spoke, was held at the Guildhall on May 3, it is worth while to consider again some aspects of the proposals usually overlooked.

The promoters of the Bill have circulated a mass of literature, in which the advantages are emphasised and the objections disregarded. Among these communications is an article contributed to *Die Woche* by Dr. E. von Engel of Berlin, who supports warmly the proposition of accommodating the standard meridian of Greenwich to that of Berlin or Mid-Europe. We have no doubt he is perfectly sincere in his recommendation. At the same time, the advantages of making the hours of business in England coincide with those in Germany is entirely in favour of the latter country.

In consequence of this renewed earnestness and vigour of the daylight-saving movement, it is desirable to express, concisely and decisively, some fundamental objections to a scheme which can be made to present so much that is agreeable. This is the more necessary because there is a feeling that scientific men are inclined to display a selfish regard for their own convenience, and a contemptuous indifference to



national requirements and economy. It is needless to say that such a view completely misrepresents the character of the scientific objection to the scheme. Let us admit, as fully as the most ardent of the supporters of Mr. Willett's scheme could wish, that the acceptance of his proposed legislation will do all that he demands for it: that it will give London 154 more daylight-using hours in the year, that it will reduce the lighting expenses in all industrial operations, that it will improve the health of the nation and be productive of other advantages. It is still incumbent upon the promoters to show that the machinery which they propose is the best adapted to the end in view, and that it will be effective. Our contention is that they have sought to effect the amendment they desire in an objectionable manner. Our lives, duties, business, and pleasures are not uniformly distributed throughout the hours of daylight. Then let us have a more systematic arrangement. What should be aimed at is a modification of our habits on judicious lines. It should be the business and the effort of Mr. Willett and his friends to cultivate a more enlightened public opinion, to persuade people to adopt more rational customs. He has tried to get a desirable result by a wrong method; we might say, by a disingenuous method.

Of course, it may be argued, as Dr. von Engel does, that "No society, however powerful, would be able to induce a universal movement for early rising for increasing our enjoyment of the sunlight." If not, why not? What has been the determining factor by which the conduct of life has been continually shifted later in the day? It is not impossible that the preference for the afternoon has been brought about by the necessity or convenience of regulating life not by light, but by heat. The heat meridian does not coincide with the light meridian, but is some two hours or more after it, and the day is arranged apparently so as to make available the greatest amount of heat. Mr. Willett asks us to disregard this effect. He does not seem to see, or at least does not admit, what is perfectly obvious to all who have given the matter sufficient consideration, that if more light is utilised in the morning, there is also a lower temperature to be encountered. To have to burn a fire in the early morning would be a very decided set-off to the use of less artificial light at night. But on this view we do not insist. We are content to make the point, that heat as well as light should be considered, and that its importance in the comfort of life cannot be neglected, as is shown by the social arrangements that obtain in other countries of Europe, as well as in the Tropics. But perhaps the promoters of the scheme for periodically changing the standard meridian contemplate also a seasonal variation of the thermometer scale. It would be just as reasonable for Parliament to enact that, in certain months, a temperature of, say, 60° should be called 70°, as it would be to agree that for a certain part of the year 6.0 o'clock should become 7.0 o'clock.

In his speech at the Guildhall, Mr. Churchill referred to some points upon which we have a few words to say. He mentioned that the agricultural population of the country already make full use of daylight hours in the various seasons, and that thousands of firms and offices (he might have included the Board of Education) have different working hours in summer and winter. A not inconsiderable number of people thus solve the problem in the most reasonable way by adapting their habits so that the best use is made of daylight. This would seem to provide an argument for urging similar action upon other sections of the community, but scarcely furnishes a reason for compulsory alteration of the clock

upon days prescribed by Act of Parliament. It is only in a great city like London that individuals whose hours of work and leisure vary with the seasons can be said to suffer any difficulty or inconvenience because, as Mr. Churchill said, they are "out of contact with the customary time-table of the nation." There is no general time-table of life and labour followed in the United Kingdom as a whole. The "customary time-table" of London differs as regards evening meals and amusements from that of nearly all other cities in the kingdom, being an hour or more later than is usual in most provincial towns. If custom is to be considered in the scheme for the division of daylight and darkness, then London will require the clocks to be advanced by two hours to be placed in the same position as most places in the provinces where the clocks would be put forward for one hour.

It is also forgotten by the promoters of the scheme that the daylight hours of London and other places in the same latitude differ considerably from those of places farther north. At Aberdeen, Dundee, and Edinburgh, for instance, lighting-up time for vehicles in the present month is about 35 minutes later than in London, and next month it will be three-quarters of an hour later, that is, about 10.0 p.m. Scotland has, in fact, a natural extension of the daylight hours in the summer months without any need for legislation. At Edinburgh and all places north of it, there are not sufficient hours of darkness in May, June, and July for the normal eight hours of sleep required by men or women, and there would be no advantage in advancing the clocks by an hour from the third Sunday in April to the third Sunday in September. The 154 hours "more daylight" which Mr. Churchill says would be secured by the scheme "to the whole people of these islands," are already possessed by the people of Scotland between April and September. Why not suggest, therefore, that for certain months of the year the latitude of Edinburgh shall be the latitude of all other places south of it in the United Kingdom, instead of proposing that the longitude of Berlin shall be the longitude of Greenwich?

Another point referred to by Mr. Churchill was the ease with which the change of nine minutes from Paris to Greenwich time was effected recently in France. It is difficult to understand how this action can be held to afford any support to the scheme of "daylight saving." Our own view is that, as France has now adopted the Greenwich meridian as its standard for time-reckoning, it would be an unfriendly and injudicious act for us to abandon Greenwich time for German time during an arbitrary period of the year. France has now come into line with the international system of time-reckoning based on standard meridians beginning with the meridian of Greenwich and extending round the whole civilised world. These meridians are permanent standards at present, but if the principle of the daylight-saving scheme were accepted they would oscillate east and west on different dates, and hopeless confusion would be introduced in the place of a scientific system.

The fact that it is easy to advance one's watch by an hour when entering the zone where Mid-European time is kept, and to put it back an hour when leaving the zone, provides no argument for the alteration of the time of the United Kingdom twice a year. When you move fifteen degrees east you really do reach a longitude at which the time, as indicated by the sun's position, is an hour in advance of Greenwich time. Noon occurs nearly an hour earlier at Berlin than at Greenwich, whatever

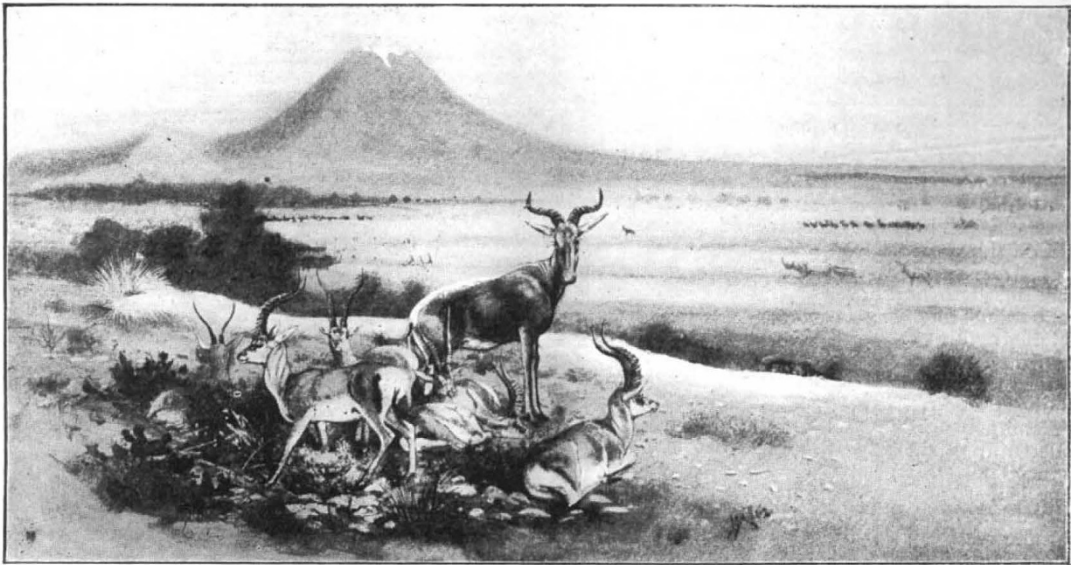


standards of time are adopted, so it is natural to adapt one's watch to the new conditions when reaching Germany. By the daylight-saving scheme, 11.0 Greenwich time would be called 12.0 noon during the summer season; that is to say, the sun would be considered to have reached its highest point for the day an hour before it actually does so. Of course, we remember that there is a difference between apparent time and mean time, but the variation of the equation of time does not effect the affairs of everyday life. When, however, it is proposed that Parliament should grant powers to enable the people of the United Kingdom to pretend that during summer months noon at Greenwich corresponds to noon in the neighbourhood of Berlin, it is time the absurdity of the scheme was exposed. The scheme is unworthy of the dignity of a great nation, and if it were made compulsory by legislation, it would be a monument to national flaccidity. We cannot think that the

to weigh considerably against the idea of the former existence in the country of a wild race.

The article on grouse disease, to which Dr. H. B. Fantham contributes the section on the coccidiosis of young birds, has been written specially for the present edition, and is therefore thoroughly up to date, although the author is careful to add that many of the inferences and conclusions referred to must be regarded as more or less provisional. This contribution, which is well and profusely illustrated, is thoroughly worthy of its author, but since Dr. Shipley's investigations into grouse disease have been already reported in NATURE, further mention is unnecessary.

The other articles on natural history subjects display that pleasing variety of treatment to which allusion was made in my review of the first volume. For instance, whereas Mr. Bryden, in the article "Deer" (which appears to have been compiled from the "Deer



Tora Hartebeest and Grant's Gazelles. From "The Encyclopædia of Sport."

Government will lend its support to proposals which involve more international consequences than the promoters are aware of, and would make us the laughing-stock of the enlightened people of the world.

#### THE NEW ENCYCLOPAEDIA OF SPORT.<sup>1</sup>

FROM a biological point of view two articles in this issue are especially noteworthy, namely, one on the Arabian horse, by the well-known breeder, Mr. W. Scawen Blunt, and one on grouse disease, by Dr. Shipley. The former stands as it was in the first edition, the author stating that he has practically nothing to add or alter. Its special interest lies in the fact that the author still maintains the theory that the Arab horse, in place of being a comparatively late importation, originally existed in a wild condition in the comparatively desert districts of Nejd and the central plateaus of Yemen. On the other hand, such historical evidence as exists does not indicate that the natives of Arabia were in possession of tame horses at a very early period, and this seems

of All Lands"), treats his subject almost exclusively from a zoological point of view, the writers of "Elephant" confine themselves mainly or entirely to the sporting aspect of their theme, making no reference to the local races of the African species. On the other hand, in the article "Giraffe," Mr. Bryden does record most of the local forms of that species. Need of revision in the article last mentioned is evident from the repetition of the old statement (which was not true previous to the discovery of the okapi) that "the giraffe forms a distinct family of its own." Neither is Mr. Selous quite faultless when writing of the African elephant, since he repeats the old error of this species being "somewhat less in bulk and stature than either the mastodon or the mammoth." Nomenclature is also, as in the first volume, distinctly erratic, Mr. Bryden, in the article "Deer," denominating the Chilian guemal *Mazama bisulca*, whereas Mr. Hesketh Prichard, in the article "Guemal," calls it *Xenelaphus bisulcus*.

That the editor has endeavoured to bring the biological articles up to date is, however, quite evident, as, in addition to the already mentioned article on grouse disease, there is one, by Mr. Bryden, on the African forest-hog (*Hylochoerus*), a genus originally described in NATURE. In this effect he

<sup>1</sup> The Encyclopædia of Sport and Games. Edited by the Earl of Suffolk and Berkshire. A new and enlarged edition. Vol. II. Crocodile Shooting—Hound Breeding. Pp. viii+448. (London: W. Heinemann, 1911.) Price 10s. 6d. net (abroad 12s. 6d. net).