

16. *Mr. G. M. Thomson.*] As an educational authority, do you not think it an important thing that children should be taught how time is arrived at—that it is not, as some people imagine, an arbitrary thing?—Yes.

17. If you were endeavouring on a summer morning to teach them how noon was arrived at, do you not think it would be an extremely awkward thing for you to have to go into a laborious explanation to show that, though a particular time of the day was noon, yet we had deceived ourselves into calling it 11 o'clock?—I do not see very great difficulty about that, because observations taken at a certain time of the year would now be half an hour out in certain parts. I do not see any difficulty about making it ninety minutes instead of thirty. If you are going to be exact at all you must make a correction and explain to them why you take them out to observe the sun's altitude, for instance, at 12.30 instead of 12, at Invercargill on certain days of the year.

18. It would be a big shock to the faith of the children. Do you not think that would be the effect?—I do not know. Children are not so easily shocked.

19. Do you not think that would be the effect, when you were teaching them what is strictly a scientific fact and you have to explain that we have agreed to humbug ourselves to this extent?—I do not see a teaching difficulty. You have got to make some corrections now. When the child was very young you would have to give up calling 12 o'clock "noon" to him.

20. But this introduces a very radical alteration, and only for a portion of the year?—Yes; to that extent you would have an additional element of correction to make, but I do not think it would be difficult.

21. *The Chairman.*] It would not be a very hard matter to give the reason for it?—I do not think it would. The way I would do it would be to keep in the school a clock showing the actual mean local time.

22. *Mr. Fraser.*] I understood you to say that the mean time adopted now is not the most suitable mean time for New Zealand?—What I mean is this: that for something like a third of New Zealand 180° would be just as good as $172\frac{1}{2}^{\circ}$, and that it would not inconvenience the remainder of New Zealand, and we should then be keeping to the true hour-zone method. At the present time we are an exception to the hour-zone method. We have made a half-hour zone—a zone that has its medial point at the half-hour instead of at the hour. That is different from nearly all the rest of the world.

23. If we altered the mean time of New Zealand by half an hour, should we be as scientifically correct for our mean time as at present?—I should like to know whether you mean for the majority of the population.

24. I mean, having regard to the bulk of the area and population of the country?—I should like to take the figures out to find where the middle line of population came, first; it comes between the two, somewhere. If you take a meridian to divide equally the population through it would come between the two. The present standard meridian for New Zealand goes nearly through Christchurch, north and south.

25. My reason for including the area is this: If we are going to fix our mean time with reference only to the population as at present distributed, it would not be correct, perhaps, fifty years hence?—That is so; if most of the increase of population took place in the North Island, the population meridian would move to the east.

26. You must take both into consideration, because there is possibility of expansion of population in areas where now it is very small?—That is so. You see there is an agreement among all countries to take hour zones. New Zealand, South Australia, and two other places were expressly excepted from that agreement, and allowed to take half-hour zones. So that at the present time, unless we are going to cut ourselves away from the standard time agreement of the world, we shall have to take either the half-hour zone, as we do now, or the hour. If we took the hour zone of 180° , we should be doing like other people. It is not an arbitrary thing altogether, because the correspondence of the sun with the true time is more or less important. Noon is the centre of the day, and for these reasons I should be against the alteration of the clock.

27. Generally speaking, if we altered our mean time by half an hour, we should be very nearly as accurate as we are under our present mean time?—In the North Island we should be practically as accurate. In the north-east part of the South Island we should be practically as accurate, or very nearly so; but in the south part of the South Island we should not be so accurate. As a matter of fact, however, it would be a gain even there in the direction of giving more daylight.

28. *Mr. Sidey.*] I understand your suggestion is rather to meet the average population as at present existing?—When I was asked where the centre of population would be I said I should like to investigate the matter first.

29. Is not the present New Zealand mean time fixed because it is the mean time between that of the most extreme westerly and that of the most extreme easterly portions of New Zealand?—It is nearly the mean.

30. It is much nearer than it would be if you made it the meridian of 180° ?—Yes, it is much more nearly equally between the extreme positions now.

31. To whom do we owe the fixing of the eleven hours and a half ahead of Greenwich? Is it not to Sir James Hector?—I could not say.

32. The idea in fixing it was that it was the mean between the extremes of east and west of New Zealand?—I dare say. I do not know. It is very nearly the mean between the two, but as a matter of fact if you consider population it is more nearly the mean for the South Island. The present meridian is outside the North Island. As far as the North Island is concerned, 180° is just a little to the east of it and $172\frac{1}{2}^{\circ}$ is just to the west of it.