distinct bearing on the question why each species of whale differs from the others in its seasonal occurrence. The abundance of whale-food is dependent on conditions favourable for the growth of diatoms and other chlorophyll-containing organisms; and in this connexion may be mentioned Mr. A. G. Bennett’s interesting observation that the skin of certain whales is covered by a film composed of innumerable diatoms. The evidence is in favour of the view that this skin-film is not present on thin individuals which have recently come down from the north, but that it develops during the stay of the whales in Antarctic waters. The study of the film and perhaps of whale-parasites may prove to be capable of giving important information with regard to migrations.

For many years the Norwegians have taken the leading place in the whaling industry, and they have large interests in Antarctic whaling. It is thus natural that they should feel anxiety with regard to the possible results of a protective policy, and this is shown by an article recently published in the Anglo-Norwegian Trade Journal (Vol. 9, No. 98, February). The comments in question were a rejoinder to criticisms of the whaling industry which had appeared in the Morning Post, based on a lecture given by myself, as reported in Nature (Vol. 110, December 16, 1922, p. 827). I had pointed out, on the incontrovertible evidence of history, that the operations of whalers in the past have invariably followed by a depletion of the whaling fields. The Atlantic right whale no longer frequents the Bay of Biscay in numbers sufficient to maintain a whaling industry, nor is the Greenland whale still common in the bays of Spitsbergen, in Davis Straits, or even in the North Pacific. The grey whale disappeared long ago from the lagoons of California, and there is no longer occupation for the hundreds of vessels which left European and American ports annually, in the eighteenth and part of the nineteenth centuries, in pursuit of the Greenland and other right whales and the sperm whale. With these facts in view the least that is required is the adoption of a cautious policy, lest the mistakes of the past should be repeated.

The whaling companies are admittedly interested in the avoidance of extermination, which would mean the closing of their operations, but their advocates have maintained that, in view of the enormous extent of the oceans which are frequented by whales, the activity of hunters in a small area is not likely to produce much effect in reducing their number. It will be seen, however, by consulting a map, that South Georgia and the South Shetlands lie in the region where the Antarctic Ocean is narrowest, and that they are admirably situated to intercept the stream of whales in their circumpolar movements. It would not be surprising if operations at these stations alone were found capable of depleting very seriously the entire stock of Antarctic whales, even if no new stations were to be founded in other localities, as seems likely to happen in Ross Sea, for example. The danger is all the greater, taking into consideration the highly efficient methods of modern whaling.

The acquisition of a sound body of scientific evidence is the object of the expeditions which are being planned by the Colonial Office. Although I do not conceal my personal conviction, as at present informed, that whaling is being conducted on too large a scale, I do not deny that a study of the subject by competent investigators on the spot may lead to a different conclusion. The Trustees of the British Museum have acted in an advisory capacity to the Colonial Office since they first became interested in Antarctic whaling, not long after its inception. I am authorised to state that they do not desire to take up an extreme position in the matter, but that their efforts are directed to the restriction of whaling to an extent which is not inconsistent with the permanent preservation of whales. This is a moderate view, with which it may be hoped that the representatives of the whaling industry will agree in principle. The article to which I have referred virtually admits as much, and the willing co-operation of the whaling companies will be of the greatest value to the expedition. It may be hoped that it will be possible to find a modus vivendi satisfactory to both parties, who are equally interested in preventing the extermination of whales.

Einstein and the Recent Eclipse.

The results of the expeditions from Canada and the Lick Observatory to Wallal, Western Australia, for the solar eclipse of last September have now come to hand; and both report in favour of the Einstein shift of starlight. In each case the number of stars measured was very large—exceeding eighty—the magnitudes being between the seventh and the tenth. From this it is evident that the exposures were comparatively long, and consequently there would be considerable extension of the corona on the plates, which would obliterate the stars nearest the sun. The measures, however, were sufficiently exact to give a decisive result using the more distant stars. Profs. Campbell and Trumpler measured all their plates in duplicate; the values for the shift at the limb of the sun deduced from the individual plates ranged from 1·59" to 1·86", the mean of all being 1·74", which is only 0·01" less than Einstein’s predicted value.

As Prof. Campbell is well known to have been in no sense predisposed in favour of Einstein’s theory, this result, combined with that of Prof. Chant and the mean of the Principe and Sobral results in the 1919 eclipse, will probably be regarded as setting the question at rest. Prof. Campbell says in his telegram that he considers further work of this kind unnecessary, so that he will attack other problems in the Californian eclipse of next September. There are still the plates taken by the Australian expeditions to be measured. This is to be done at Greenwich; their scale is smaller than that of the Lick Observatory plates, so that probably less weight will attach to them.

The evidence as regards the presence of the shift in the solar spectral lines is now fairly evenly balanced “For” and “Against”; but in any case this test is a less decisive one than the other two, since there are so many known causes of shift of spectral lines, which is not easy to eliminate completely.

A. C. D. C.