

chiefly through Australian experiences, where, moreover, the camel has been introduced as a beast of burden, with more success than the tamed elephant in Africa. The art of sledge-travelling has been vastly improved by the skilful cutting down of all superfluous weight, enabling travellers to drag more food, and so to be absent from their depôts for a larger number of days.

As regards food, the tinned meats, compressed vegetables, and condensed milk, which are invaluable during the first days of travel before the expedition has settled into regular ways, are all late inventions, and the merits of lime-juice are now far better understood than they were fifty years ago.

The *personnel* of a travelling party is decidedly improved. Whatever may be the state of the physique of the lower orders of the population, there can be no doubt that the upper orders are physically better developed than they were. They are, as I have good reason to believe, in the absence of direct measurements, taller; they achieve greater feats in running, leaping, walking, and other athletic performances than their grandfathers did. They lead healthier lives from the discontinuance of the heavy eating and hard drinking of old days, from the better aired sleeping rooms, the existence of proper means of washing, and the seaside or Continental summer vacation.

The greatest benefit of all to travellers is the modern rapidity and ease with which distant parts of the world are now reached. In 1830 it required 70 days sailing from England to reach the Cape of Good Hope, 120 days (in the S.W. monsoon) to reach Bombay, and 130 days to Sydney. It was 40 days' sail to New York, 42 to Jamaica, 56 to Rio, and 110 to Valparaiso. The length of time that the post now takes from London to these places is as follows: Cape Town 21 days, Bombay 18 days, Sydney 43 days, New York 10 days, Jamaica 18 days, Rio 21 days, Valparaiso 39 days; the average increase of speed being more than threefold. There is scarcely any important part of the world that cannot now be reached in two months from London; even the Antipodes are only six weeks' journey. This facility of communication is accompanied by a corresponding spread of commerce, and travellers can now easily refit themselves at distant points. It has recently occurred to the Geographical Society to have had to meet bills drawn upon her Majesty's consul at Zanzibar by a traveller in their employ, for which he had been furnished with goods by Arab traders at Nyangwé on the Upper Congo, as well as at places in Central Africa which had never before been visited by a white man.

2. *Isochronic Postal Charts.* By FRANCIS GALTON, F.R.S.

By 'isochronic' postal charts I mean charts that show the distances attained in all directions from the same starting point, by the post, 'in equal times.' Let us view in imagination the stream of travellers who leave London simultaneously and go as quickly as they can to their destinations, starting by the postal routes. Some of the travellers will be seen to leave the main lines at each successive halting-place, and to branch to the right and to the left, perhaps repeatedly and by various conveyances, before their journey is over. They may reach the same goal by different routes, though not at the same moment. In the meantime the travellers on the main tracks are swiftly moving ahead. At length every part of the world is reached. The course of the stream of travellers may be likened to the spreading of the tide as it advances over broad sands. The rising waters run quickly along certain channels. These diverge, subdivide, interlace, and join. After a little more time only a few isolated patches of dry shore can be seen, at last the whole surface is overspread by the water. In the maps I exhibit, I have endeavoured to represent this appearance upon all the postal routes from London. In accordance with the definition of 'isochronic' given above, I am obliged to suppose that the mails have been despatched simultaneously to all parts, and I show by bands of different colours where the travellers would be at different periods. All places within ten days' journey of London are coloured green, those between ten and twenty are orange, between twenty and thirty they are red, between thirty and forty they are blue, and those beyond forty are brown.

Isochronic maps would probably be of much convenience to tourists. They could be constructed for the Continent or for home excursions.

3. *On the Geographical Work of the Palestine Exploration Fund.*

By TRELAWNEY SAUNDERS.

The author gave an account of the survey of Western Palestine, to which the Association had contributed, conducted by Lieutenant Conder and Lieutenant Kitchener, and now completed. It embraced nearly the extent attributed to the Land of Canaan, in the earliest specification of a geographical boundary to be found in Biblical history, viz., in the 10th chapter of Genesis. After an elaborate sketch of the work of earlier explorers, he proceeded to describe the survey of Lieutenants Conder and Kitchener. This had occupied from 1872 to 1877, and was executed on the scale of one inch to a mile, and he believed that when the great difficulties which the task had involved were considered—difficulties of climate, race, and fanaticism—the map would be found to possess a fulness and accuracy far beyond that of any other previously executed. It was now possible to undertake a systematic analysis of the natural features of the ground, its watercourses and drainage-basins, its plains and highlands, with a degree of precision and detail that was previously unattainable for lack of knowledge.

FRIDAY, SEPTEMBER 2.

The following Papers were read:—

1. *On the Progress of Geography in Asia during the last fifty years.*
By Sir RICHARD TEMPLE, Bart., G.C.S.I., F.R.G.S.

The author described the physical geography of Asia, and pointed out the portions which, during the last half-century, had been surveyed, partially surveyed, or only explored. As regards India and Ceylon great progress had been made. From the base of the Himalayan range to the southernmost cape nearest Ceylon, the British territories have been mapped, for the most part, with as much minuteness as the best managed estates in Europe. The great rivers are well known; the altitude of many of the highest mountain-peaks has been determined. The country has been covered with a network of triangles, a large arc of the meridian determined, the geodesic contour of the land ascertained. In two provinces only, Bengal and Behar, is the field-survey wanting. The geography of Afghanistan and Beluchistan is, however, utterly incomplete. The territory here is not only difficult from its mountainous character, cold climate in many quarters, and desert character in others, but also rendered inaccessible to surveying parties by the fierce character of its inhabitants. During the recent war, however, a surveying staff was attached to the military establishment, by whom the route was surveyed and valuable results obtained. Still the work in Afghanistan is very incomplete. The geography of Beluchistan is even less advanced. Of the north-eastern portion considerable knowledge has been gained of late years. The Chinese have bestowed much labour on topography, but their surveys have not been scientific, their maps not precise, and the general geography is not exactly determined. The grave changes which have been brought about in Japan have led to a greatly increased knowledge of those islands. The Russian Government has done much in the northern parts of Asia. The physical geography of Persia is, as yet, very imperfectly known. The author passed on to notice the nautical and geological surveys, concluding by pointing out the principal problems that yet await solution.