time, found round the margin of the country. Mr. Prichard says: "Although not giants, the Tehuelches are certainly one of the finest races in the world. Most of them average six feet, some attain to six feet four inches, or even more; and in all cases they are well built and well developed." . . . "Progress, the white man's shibboleth, has no meaning for the Patagonian. He is losing ground day by day in the wild, onward rush of mankind. Our ideas do not appeal to him. He has neither part nor lot in the feverish desires and ambitions that move us so strongly. As his forefathers were, so is he—content to live and die a human item with a moving home. . . . He is far too single-minded and too dignified to stoop to a cheap imitation."

Like many other travellers, Mr. Prichard appears to have initiated his explorations with much impedimenta, the care of which, for weeks, entailed a life of misery—eight men, sixty horses, two wagons with luxuries, and "drafts on Cook and Son" (not easily cashed at a Tehuelche bank) might have provoked some criticism from the army which San Martin marched across the Andes. But our author, be it said to his credit, soon redeemed himself and put his expedition into light marching order. In time, he might have got down to gaucho methods of travel, five horses to a man, a herd of horned cattle for food and nothing more, for months together.

A sportsman's veins must throb as he reads Mr. Prichard's volume, for it is one long tale of hunting exploits; but one must applaud the author for killing for food alone, and not for gratification of the love of slaughter. Of large game, the guanaco proved to be most abundant, but bird life was myriad. Altitude seems to make no difference to that representative of the camel species, the guanaco; he thrives equally at sea-level and, in great herds, at an elevation of from 10,000 to 13,000 feet among the Bolivian and Peruvian Andes, almost rivalling the condor in this respect.

Here and there, the author makes an interesting remark upon the effect of his surroundings on the mind: "The farther you penetrate into Patagonia, the more its vast emptiness weighs on you and overwhelms you. . . . Out there, in the heart of the country, you seem to stand alone with nothing nearer or more palpable than the wind, the fierce mirages and the limitless distances. A man accustomed to cities would here feel forlorn indeed. . . . Nature, with her large, loose grasp, enfolds you. There is no possibility of being mentally propped up by one's fellow man."

On reaching Lake Buenos Ayres, he found it "measured seventy-five miles in length; vast masses of milk-white timber, blanched by the influences of sun and water, and eloquent of the mountain land and forest whence they have been washed down, lie at the lip of the flood-level. . . . Around the lake lay piled the skulls and bones of dead game, guanaco and a few huemuels."

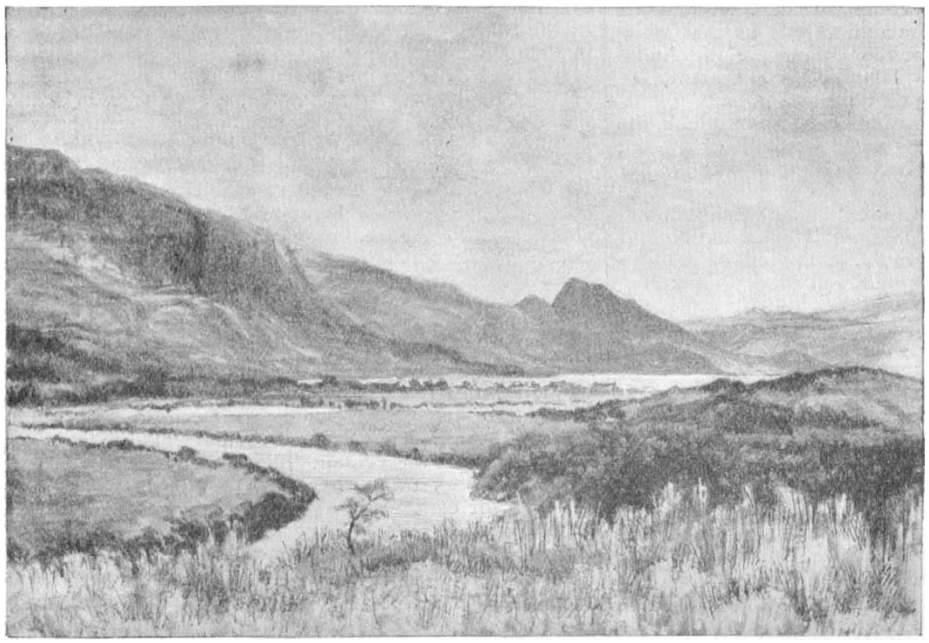


FIG. 1.—Cañadon of the River Katarina. (From Prichard's "Through the Heart of Patagonia.")

"There are many thousands of square miles of unexplored forest in Patagonia. It is a region unknown and mysterious, which has never been deeply penetrated by man owing to the practical absence of game on which he might subsist."

Mr. Prichard's book is replete with interest, and shows that he put himself into close touch with the region which he examined. His final chapter treats of the future of Patagonia, a large portion of which he believes suited to pastoral purposes. It is evident that the emigrant will soon destroy the varied and beautiful forms of animal life which nature has placed there, and substitute for them horses, sheep and other cattle—then Patagonia will be civilised.

G. E. CHURCH.

THE GEOGRAPHY OF NORTH-WEST EUROPE.[1]

IN this second volume on Europe in the new issue of Stanford's "Compendium," the chief place is given to the British Isles. Chapters on Belgium, the Netherlands, the Grand Duchy of Luxemburg, Scandinavia, Denmark and Iceland occupy about a quarter of the volume, and contain descriptions of the physical features of these countries, with brief references to the geology, and accounts of the climate, the agricultural, mining and other industries, the ethnology, and of the changes introduced by man, notably in the Netherlands. These subjects are necessarily dealt with far less fully than in the case of the British Isles.

The chief aim of the work is to show "how geographical conditions have affected the course of history." Hence it is needful to gather the lessons which geology teaches, and in dealing with our country the author

[1] "Stanford's Compendium of Geography and Travel" (new issue)—Europe. Vol. ii. The North-west. By G. G. Chisholm, M.A. Pp. xxviii + 742. (London: Edward Stanford, 1902.) Price 15s.

enters rather fully into the main geological and topographic features, and if his account is somewhat rambling, it has evidently been prepared with pains. Thus we learn how the geological formations have influenced the physical features, the mineral wealth and the soils, and have determined the development of industries and of population.

The reader, however, must be warned not to take everything he reads as sound geological doctrine. Thus (on p. 75), "It is estimated that in comparatively recent (post-Miocene) times the higher peaks of Britain were about 3000 feet higher than they are now above the present sea-level, and as the sea-level of these times relatively to this portion of the land was 3000 feet lower than it is now, the absolute elevation of those higher peaks must then have been about 9000–10,000 feet." There are probably few geologists who would support this statement.

Moreover (on p. 81), it is not right to say that in the lake district "the ancient stratified rocks of Cambrian or Silurian age" are extensively covered with volcanic deposits, the fact being that the Skiddaw slates are overlain by the Volcanic series of Borrowdale, which is an important member of the Lower Silurian or Ordovician system.

On p. 98, we read that the chalk with flints is for the most part "a lower zone than the chalk without flints," whereas the reverse is usually the case. The same remark applies to a paragraph on p. 116, wherein it is stated that "the difficulty of obtaining water retarded the spread of London northwards over the London Clay and Boulder-clay in the direction of Islington, Highbury, &c., until water was conveyed there by pipes, while sands and gravels in the north-west allowed of an early extension of the suburbs towards Hampstead."

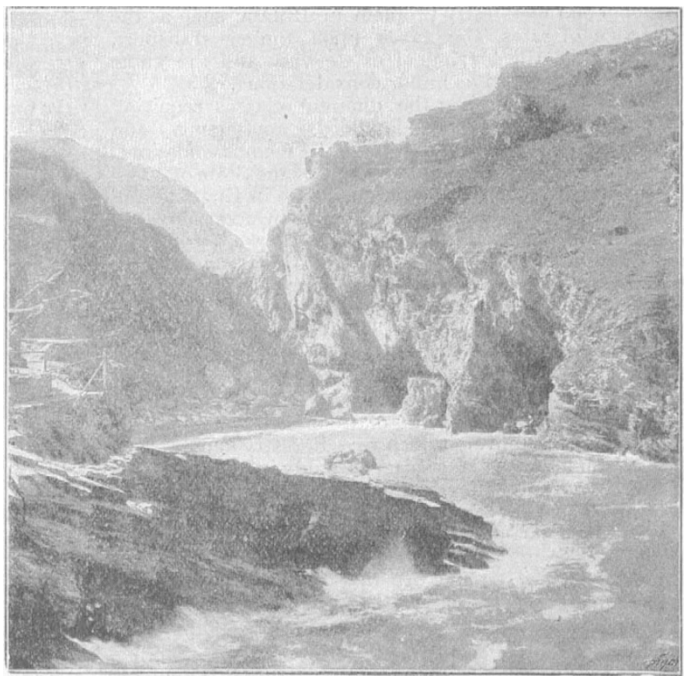
As a matter of fact, Islington is on gravel, and although the old village of Hampstead is on Bagshot Sand, which locally yields springs, the large area of London Clay north and north-west of the Marylebone Road was long thinly populated in the districts now known as Camden Town, Kentish Town, St. John's Wood and Kilburn. In Middlesex, the Boulder-clay does not occur south of Finchley.

After the general geological account of England and Wales, a chapter of twenty pages is given to the volcanic phenomena of the British Isles, based on Sir Archibald Geikie's "Ancient Volcanoes of Great Britain," as duly acknowledged. Interesting as this subject is, it appears hardly to require separate treatment in a work intended as a "Compendium of Geography and Travel." Curiously enough, no mention is made of the Cuillin Hills of Skye, the roughest mountain group in Britain, and one which especially tempts the rock-climber.

We pass on to chapters having special reference to England and Wales, and dealing with the climate, rivers and lakes, and the inhabitants from Palæolithic times to the present day. There is only a brief reference to modern views on the origin of rivers, but we find much interesting matter of all sorts, with statistics where needful and references to authorities.

English agriculture, with an account of the open field system, mining and smelting, manufactures and commerce, and the political situation from "Domesday to 1800" are dealt with in separate chapters. Consequently we are led back again to early English and Roman times when reading of land customs and lead-mining; while coal-mining, dealt with briefly in earlier chapters, is also touched on as regards its history, and again dealt with from a statistical point of view in the subsequent chapter on the nineteenth century. A certain amount of repetition can hardly be avoided. The sites of villages as dependent on geological conditions, mainly on water-supply, are discussed briefly in the geological chapters. Later on, there is a chapter devoted to the chief towns, their history and growth. Thence we pass on to local government, with which the account of England and Wales terminates. In this last chapter, it is interesting to read of the utilisation of Carrington Moss and Chat Moss for the town refuse of Manchester, and we believe that the value of the Carrington estate has been increased to the extent of 35,000*l*.

Scotland and Ireland are dealt with less fully, but the same general subjects are discussed, including Highlanders and Lowlanders, mineral products (with a mention of the many old bloomeries), Scottish agriculture, the growth of towns, &c. With reference to Ireland, there is a chapter on the Irish land question, the causes of Ireland's decay, and possibilities for the future. It is concluded that much may be done if hereditary sloth be shaken off and industrial knowledge be acquired.



Frith, photo.

FIG. 1.—Tintagel. (From Chisholm's "Europe.")

British dependencies in Europe, including the Isle of Man, the Channel Islands and Malta, are disposed of in five pages. The Orkney and Shetland Isles, though not mentioned in the index, are briefly referred to. St. Kilda is not noted. The index is not all that could be desired. Thus, no reference is given to coal, chalk, geology or Old Red Sandstone, while Weybourn Crag and Wadhurst Clay are indexed.

Despite the few criticisms we have ventured to make, we can commend the work as containing a very large amount of useful and interesting information, pleasantly written, on what may be termed the geographical history of north-western Europe, and of the British Islands in particular.

It is well printed, and illustrated with two geological

and fourteen other maps. There are also eighty-six text illustrations, mostly of towns and of striking physical features. By the courtesy of the publishers, we are enabled to give one of the illustrations.

BRITISH FORESTRY.

THE recommendations in the report which has just been issued by the committee appointed by the President of the Board of Agriculture "to inquire into and report upon British forestry" follow very much the trend of the opinions that have in recent years been expressed in NATURE and elsewhere. As was expected from the terms of the reference to the committee—"to consider whether any measures might with advantage be taken, either by the provision of further educational facilities or otherwise," to improve and encourage the "position and prospects of forestry"—the report deals chiefly with the root-matter of the forestry question—education. To such an extent is this the case that other elements of the forestry problem in Britain, such as the incidence of rates, the taxes upon timber transport, inequality in the levying of estate duty and the game question, are treated as minor considerations.

The report recognises the different classes requiring education in the country—landlords, land-agents and wood-foresters. In the forefront of the recommendations, the committee places the acquisition by the State of "two areas for practical demonstration," "one in England and the other in Scotland, of not less than 2000 acres, if possible, nor over 10,000 acres in each case," to furnish an object-lesson and to serve as areas of instruction for working foresters. They also recommend that forestry should be a subject of instruction at Oxford and Cambridge as it is at Edinburgh, and that example-plots of 100–200 acres in extent should be formed in the vicinity of these universities for the illustration of forestry teaching, and in this connection they also express the opinion that the forestry department of Coopers Hill should be transferred to a university centre. Forestry should also, they recommend, be a subject of study in the curricula of all agricultural colleges, and the teaching of forestry by county councils is recommended.

The whole tenour of the report is sound, although timidity and want of grasp might be indicated in several places, and it is satisfactory that the President of the Board of Agriculture has now in his hands a statement showing the main lines upon which, in the opinion of those who have given their attention to the subject, the forestry of this country may be improved. It remains to be seen whether any action will follow upon the report.

NOTES.

IT is with deep regret that we announce the death of Sir George Gabriel Stokes, Bart., F.R.S., at Cambridge on Sunday last, at eighty-three years of age. By direction of the president, the ordinary meeting of the Royal Society announced for to-day will, out of respect for his memory, not be held. We believe that representatives of all the scientific organisations with which Sir George Stokes was connected will attend the funeral at Cambridge to-day.

WE regret to see the announcement of the death of the Rev. Norman Macleod Ferrers, F.R.S., master of Gonville and Caius College, Cambridge, in his seventy-fourth year. Dr. Ferrers graduated in 1851 as senior wrangler and Smith's prizeman. He was the author of several mathematical treatises, including one on trilinear coordinates and another on spherical harmonics. He was appointed master of his college in 1880, and was elected a fellow of the Royal Society in 1877.

IT is reported that the Lick Observatory has received from the Carnegie Institution a grant of 800*l*.

THE annual meetings of the Institution of Naval Architects will be held on Wednesday, April 1, and the two following days at the Society of Arts, London, W.C. The Earl of Glasgow, president, will occupy the chair.

MR. HENRY PHIPPS, who is now travelling in India, has given Lord Curzon the sum of 2000*l*. to be devoted to an object of practical benefit or scientific research promising to be of enduring good to India.

THE *Times* correspondent at Rome states that on January 30 the Chamber of Deputies unanimously passed a vote of congratulation and thanks to Mr. Marconi for the great services he had rendered to the world and the glory he had won for his country, Italy.

THE annual meeting of the Society for the Protection of Birds will be held on Tuesday, February 10, at the Westminster Palace Hotel, Victoria Street, London, S.W. The chair will be taken at 3 p.m. by His Grace the Duke of Bedford, K.G.

IT was hoped that Gilbert White's house, "The Wakes," at Selborne, Hants, and the grounds of thirty acres, would be secured by the nation as a memorial to the famous naturalist. Announcement has, however, just been made that the property has been purchased by Mr. Andrew Pears.

THE International Congress of Historical Science will be held in Rome on April 2–9, 1903. Among the eight sections is one of history of the mathematical, physical, natural and medical sciences. Communications should be addressed to the secretary, Via del Collegio Romano, 26, Rome.

THE great electric generating plant at Niagara Falls was destroyed by fire on the night of January 30. The correspondent of the *Standard* says the fire was caused by lightning, which struck a cable with defective insulation. The short circuit thus caused resulted in the explosion of one of the big transformers in the electric power-house operated by the Falls.

ACCORDING to a Reuter message from St. Petersburg, the total number of deaths caused by the earthquake at Andijan on December 16 last was 10,000. Nearly every day subterranean tremblings of varying intensity are still felt at Andijan; on January 19 and 20 there were violent shocks, and at Uzgent, some ninety kilometres to the east of Andijan, cracks appeared in the walls of the houses.

DR. HENRY WOODWARD, F.R.S., has been re-elected president of the Royal Microscopical Society. Two visits of members of the Society to the Natural History Museum, South Kensington, have been arranged. The first will be on February 14 at 2 p.m., and the party will be conducted by Dr. H. Woodward; the second visit will take place on March 14, when Mr. W. Carruthers, F.R.S., will act as conductor.

A REUTER message from Bologna announces that Prof. Tizzoni, who recently presented to the Royal Academy of Science a report containing the results obtained from the use of a serum which he has discovered for the cure of pneumonia, states that his discovery is, so far, of purely scientific interest. Prof. Tizzoni has obtained satisfactory results from experiments with the serum on animals. Experiments have been also made with the serum in a hospital at Rome with excellent results.

PROF. SIRODOT, whose death was announced in a recent number, was professor in the Faculty of Science at Rennes for many years. Referring to his contributions to science in an