

derived. The belief, accordingly, that pre-Mohammedan Arabia was a land of illiterate nomads, must be abandoned: it was not Islam that introduced writing into it, but the princes and merchants of Ma'in and Thamud, centuries upon centuries before. If Mohammedan Arabia knew nothing of its past, it was not because the past had left no records behind it.

A power which reached to the borders of Palestine must necessarily have come into contact with the great monarchies of the ancient world. The army of Ælius Gallus was doubtless not the first which had sought to gain possession of the cities and spice-gardens of the south. One such invasion is alluded to in an inscription which was copied by M. Halévy. The inscription belongs to the closing days of the Minæan kingdom, and after describing how the gods had delivered its dedicators from a raiding attack on the part of the tribes of Sabâ and Khaulân, or Havilah, goes on to speak of their further deliverance from danger in "the midst of Misr," or Egypt, when there was war between the latter country and the land of Mazi, which Dr. Glaser would identify with the Edomite tribe of Mizzah (Gen. xxxvi. 13). There was yet a third occasion, however, on which the dedicators had been rescued by their deities 'Athtar, Wadd, and Nikráhh: this was when war had broken out between the rulers of the south and of the north. If the rulers of the south were the princes of Ma'in, whose power extended to Gaza, the rulers of the north ought to be found in Egypt or Palestine. Future research may tell us who they were and when they lived.

But the epigraphy of ancient Arabia is still in its infancy. The inscriptions already known to us represent but a small proportion of those that are yet to be discovered. Vast tracts have never yet been traversed by the foot of an explorer, and there are ancient ruins which have never yet been seen by the eye of the European. What has been accomplished already with the scanty means still at our disposal is an earnest of what remains to be done. The dark past of the Arabian peninsula has been suddenly lighted up; and we find that long before the days of Mohammed it was a land of culture and literature, a seat of powerful kingdoms and wealthy commerce, which cannot fail to have exercised an influence upon the general history of the world.

A. H. SAYCE.

MR. MACKINDER ON GEOGRAPHY-TEACHING.

THE reader in geography in the University of Oxford has been delivering a course of four lectures at the English College of Preceptors. The introductory lecture was given on Nov. 8, before a crowded audience, consisting mainly of women teachers.

We must first settle, said Mr. Mackinder (as given in the *London Journal of Education* of recent date), what are our aims in geographical teaching, else we shall be like men blindfold, trying to find their way out of a field with but one gate. If we succeed, it will be by a *θεία τύχη*. All teaching aims at discipline, or information, or both. Geography, as hitherto taught, has aimed solely at information. Even the leading authorities have supported this view. Thus a general, a distinguished member of the Geographical Society, lately complained to the lecturer of the brutal ignorance displayed by society in general, because at a large dinner-party his wife was the only guest who knew where Nassau, New Providence, was. Such geographical lore the lecturer said he heartily despised. It might have been of use before the invention of gazetteers: now it is utterly useless. Yet some geographical information is worth having, though discipline is the main thing. Thus the question turns up, "Where is Allahabad?" A reference to the gazetteer will tell us, "Allahabad is the capital of the North-West Provinces of India, situate at the junction of the Jumna and the Ganges." To the uneducated person these statements will convey nothing more than the vague impression that Allahabad is somewhere in the north of India. One who has been trained in geography will at once picture to himself the centre of a great and populous province, standing in the great plain which lies at the foot of the Himalayas. If the teacher has thus given a skeleton into which details may be fitted, he has not merely supplied information, but also developed capacity. Acquaintance with great facts, vividly and familiarly known, so that they are part and parcel of the mind's

furniture, is indeed discipline; for it involves the grasping of contrasts, analysis, learning to deal with ideas.

The basis of geography-teaching must undoubtedly be *Heimatskunde* ("knowledge of the pupil's home and surroundings"); but this sound pedagogic principle has of late been pressed to the verge of absurdity. Professor Geikie, in "The Teaching of Geography," went so far as to leave all the geography out, and teach every thing else under the sun. We are told that the professor must teach his class the homologies of the limbs of animals, and the various styles of architecture. Such general knowledge is most valuable, but there is a danger of not seeing the wood for the trees. In the same way, if the reform advocated for elementary schools to combine geography and natural science were carried, geography would be pretty certain to go to the wall. True, geography, with one exception, is a late subject, and must be based on physiography; but it is best to keep the two names separate. "Physiography" is an old term, brought into fashion again by Professor Huxley. The Science and Art Department has just given it a more extended meaning than it bears in Professor Huxley's book with that title, and includes under its astronomical phenomena the laws of gravitation, etc. Such physiography we do not need as a preparation for geography. All a child need know is the meaning of the common world around him, the air he breathes, the water he drinks, ice, snow, rain, clouds. These facts of common life might be imparted at a very early age, and were best imparted by parents. At present parents are too ignorant to teach them, and they must be taught first at school. The exception above referred to is the instilling of those rudimentary facts which are to geography what the multiplication-table is to arithmetic. Without these facts, such as the outlines of continents and oceans, which cannot be taught inductively, no comparison, no generalization, is possible; and if they are to be indelibly impressed on the mind, and form part of the groundwork, they must be learned very early. The *why* of geography cannot come till considerable portions of history and science have been answered. These outlines, our multiplication-table, must be taught by maps: they are purely a question of eye-memory. We want neither maps full of details (the old error), nor a single map of a country with only twenty names in it (the modern error), but a number of maps, each one accentuating some single feature, and showing the country in some new connection. Such maps could be produced very cheaply, and we might have a whole series of them. Even grown-up people rarely know the look of a country except in one connection, and are unable, in turning over an atlas, to recognize a map at a glance without the help of the name in the corner. So, in map-drawing, we require far too great elaboration. What we want is, to enable a child to reproduce from memory a rapid outline of Italy as a peninsula of south-western Europe, again as part of the Mediterranean coast-line, and so on. The old school of teachers, who insist on lists of names by heart, argue that "we are bound to train the memory," and that "the memory is strongest in the young." They do not perceive that they are arguing in a vicious circle. If the memory is strong, what need to cultivate it specially? What is needed is to supply it with facts worth remembering. "Give plenty of facts, and some are sure to stick." "Granted," replied the lecturer, "but these are likely to be the least important. From my school lessons on the geography of Italy, I retain the one fact that twelve miles north of Milan there is a village famous for its cheese-making."

Text-books are useful as a guide to the teacher, and as a record of what has been taught to the pupil. The old way of using them — "Get up the next three pages; now shut your books; name the departments of France and their capitals" — is a parody of teaching. Nor is the modern fashion of lecturing, by itself, much better. A lecturer can stimulate and direct study: he cannot supply accurate information; he cannot educe knowledge or test its soundness.

Teachers, by blindly following text-books, fall into the vicious method of taking one country at a time. They should go over the same ground again and again, each time in a new connection, showing the physical, commercial, political connection of one country with other countries. For this we need variety of apparatus, — maps, sections, models, views, magic-lantern slides, and, above all,

the blackboard. Lastly, the pupil must have practical experience in the field. When he has been taught how to observe and record the natural features of his own immediate vicinity, he should be taken to another district, and be taught by contrast. Such is the practice of German schools, but in England we are told that the thing is impossible, that excursionist teaching would end in anarchy. Yet head masters find no difficulty in taking cricket and football teams to play distant schools. If they themselves knew or cared for geography, the difficulty would vanish. "Such," said Mr. Mackinder, "is, in briefest outline, my ideal of geography-teaching in schools; but the lecturer can only propose: it is the examiner who disposes."

SPEED OF RAILROAD TRAINS IN EUROPE.

THE German technical press is at present discussing the speed of express trains. In answer to petitions addressed to him by a number of persons interested, says the *Railroad and Engineering Journal*, the minister of public works declared recently that it would be very difficult to respond to demands of this kind, since the speed of express trains on the Prussian railroads was already greater than in any other European country. If it should be increased, the public would not patronize the railroads.

This assertion, it is shown from statistics recently collected, is not by any means correct. The following table shows the average speed of fast trains in different European countries, and shows that Germany does not by any means occupy the first rank.

Country.	Speed per hour in miles.—	
	Including stops.	Without stops.
Great Britain.....	41.7	44.6
France.....	32.8	36.2
Holland.....	32.5	35.0
Belgium.....	31.8	33.5
North Germany.....	31.8	34.3
South Germany.....	31.2	33.0
Austria-Hungary.....	30.0	32.0
Italy.....	29.5	31.8
Russia.....	29.0	31.7

The inferiority of Germany in this point of view finds a marked expression, if we compare the speed of the great Oriental Express, which runs between Paris and Constantinople, passing over the railroads of a number of European countries, including Germany. This train is the fastest long-distance express train run in Europe, and from the time-table the average speed in the different countries is as follows: in France, 40.5 miles per hour; in Germany the speed varies in different sections, being in Alsace-Lorraine, 32.5 miles; in Baden, 35.5 miles; in Würtemberg, 30 miles; in Bavaria, 33.7 miles. In Austria the average speed is 33.5 miles; in Hungary, 34 miles; and in Roumania, 32 miles. This comparison, it will be seen, is not altogether to the advantage of the German lines.

In this connection some comparison may be made of the passenger tariffs in different countries. From this it appears that the lowest charges, both for first and second class passages, are in Belgium, Holland coming next, then Germany, then France, then Austria-Hungary. England and Italy charge the same fare for first-class passages, but the English second-class is considerably lower than the Italian. The highest fares in Europe are in Russia. Third and fourth class fares are not included in this system, as those classes of passengers are not generally carried on the fast express trains.

AMONG THE PUBLISHERS.

BEGINNING with Jan. 1, 1890, Mrs. Fuentesy Capdeville, Madrid, Spain, will publish a new scientific illustrated weekly magazine entitled *La Naturaleza*.

—J. F. Whiteaves has published in the "Transactions of the Royal Society of Canada" (Vol. VII., Section IV., 1889) "Descriptions of Eight New Species of Fossils from the Cambro-Silurian Rocks of Manitoba," illustrated by six plates.

—D. Appleton & Co. have ready "Appletons' Handbook of Winter Resorts." They have in press a book by Frank Vincent, entitled "Around and About South America." Mr. Vincent circumnavigated South America, and visited the various places of in-

terest in the different countries, including many in Brazil. The volume will be fully illustrated. They have in press a valuable historical work in "James G. Birney and the Genesis of the Republican Party," by Gen. William Birney.

—In the Christmas number of *The Ladies' Home Journal*, Theodore R. Davis gives a glimpse inside the White House and of the State dinners under several administrations, and Edward W. Bok tells what are the literary tastes of two such men as Gladstone and Bismarck.

—John Howard Appleton, professor of chemistry, Providence, R.I., author of "Beginner's Handbook of Chemistry," "The Young Chemist," "Qualitative Analysis," "Quantitative Analysis," "Laboratory Yearbook," has issued his "Laboratory Yearbook for 1890." This publication is now in its eighth year.

—Charles Scribner's Sons have just published "Among the Cannibals," which is an account by Carl Lumholtz of his four years' travel in Australia, and of camp-life with the aborigines of Queensland, considered to be the lowest race of *homo sapiens* known to exist.

—Robert M. Lindsay, Philadelphia, Penn., announces to be published in December an etched portrait of Charles Darwin, after the painting by W. W. Ouless of the Royal Academy, London, and etched by G. Mercier of Paris, pupil and collaborateur of the eminent Rajon, recently deceased. The size of the plate is about twelve by fifteen inches.

—The January number of *Scribner's Magazine* will appear with additional space, and a new department at the end of the number, conducted under the title "The Point of View." An opportunity is here given to the best writers for a brief and familiar discussion of subjects of both passing and permanent interest. In the January number the subjects touched are "The Barye Exhibition," "Thackeray's Life," "Social Life in Print," and "The French as Artists." The success of the magazine has been such that the publishers feel justified in adding these new pages to a magazine already low in price.

—E. & F. N. Spon have just published "Inventor's Manual: How to Make a Patent Pay," by an experienced and successful inventor. Thousands of useful inventions are every year patented, but on which the inventor does not realize any thing, simply for want of information how best to proceed to introduce or dispose of his invention. Among the subjects treated in this work are how to invent; how to secure a good patent; value of a good invention; how to exhibit an invention; how to interest capital; how to estimate the value of a patent; value of design patents; value of foreign patents; value of small inventions; advice on selling patents; advice on the formation of stock companies; advice on the formation of limited liability companies; advice on disposing of old patents; advice as to patent attorneys; advice as to selling agents; forms for assignments, licenses, and contracts; State laws concerning patent rights.

—Messrs. Putnam have issued in the Story of the Nations Series a volume on "Early Britain," by Alfred J. Church. It begins with the earliest authentic records, and closes with the Norman Conquest. Being intended for popular reading, it of course has not the philosophical character that a work on such a subject might have, but from its own point of view it has considerable merit. The author has followed the best authorities, though always with independent judgment; and he has probably given as clear an account of the most stirring events in early English history as his space and materials permitted. The main fault of the work, as of the majority of historical books, is the excessive attention given to military affairs to the neglect of other matters of greater importance. Mr. Church evidently thinks the Roman occupation of Britain of more consequence than some writers do, for he devotes one-fourth of his book to it; and he is not disposed, like some, to think that all that is valuable in English life is due to the Teutonic settlers. On the whole, he has made a judicious and readable book. We are sorry to have to add that, like one other volume in this series which we had occasion to notice some time ago, it contains a number of grammatical blunders, such as singular nouns with plural verbs, abverbs used for adjectives, and so forth, which ought never to be seen in a respectable publication.