Werk

Titel: The United States with an excursion into Mexico

Verlag: Baedeker [u.a.]

Ort: Leipzig [u.a.]

Jahr: 1899

Kollektion: Itineraria

Werk Id: PPN242370497

PURL: http://resolver.sub.uni-goettingen.de/purl?PID=PPN242370497|LOG_0017

OPAC: http://opac.sub.uni-goettingen.de/DB=1/PPN?PPN=242370497

Contact

Niedersächsische Staats- und Universitätsbibliothek Göttingen
Georg-August-Universität Göttingen
Platz der Göttinger Sieben 1
37073 Göttingen
Germany
Email: gdz@sub.uni-goettingen.de

dians here and there, they are gone from the Atlantic States. Only the Cherokees in North Carolina, the Seminoles in Florida, the Iroquois in New York, and the Chippewa tribes about Lake Superior remain to the E. of the Mississippi river. The aboriginal title gave way to the title of discovery, and the feeble Indian title of occupancy has been swept away by the tide of European imigration.

There are at present, as regards title and legal status, several kinds of Indians in the Union.

1. Citizen Indians. The State of Massachusetts and the United States in certain cases have conferred upon Indians the full rights of citizenship.

2. In a few states, notably New York, reservations are granted to Indians and they are protected in their tribal rights therein.

3. Roving Indians are still at large in greater or smaller bands, especially in the Rocky Mountain region.

4. In acquiring its S.W. territory from Mexico the United States inherited three kinds of Indians: the Pueblo Indians, the Mission Indians, and the wild tribes. The status of these is most confusing.

5. But the great mass of Indians in the Union are in some sort of relation to the United States and hold their lands by (1) Executive Order, (2) by Treaty or by Act of Congress, (3) by Patent to the tribe, (4) by Patent to individuals.

For the relinquishment of their ancient homes the United States has also entered into agreements to pay to the tribes certain annuities in money and goods. Under these circumstances there are some of them who are the richest communities in the world. In the Osage tribe every man, woman, and child is worth $1500. The five civilized tribes in the Indian Territory and the New York Iroquois preserve their autonomy and make their own laws, but also have a government agent. Many thousand Indians have their lands 'allotted' and thus have lately become citizens, the title to the land being inalienable for 25 years.†

XII. Physiography of North America,

by

N. S. Shaler,

Professor of Geology in Harvard University.

Although the traveller in North America may be most interested in the people or their social and material accomplishments, he will find it desirable at the outset of his journey to consider the physical conditions of the land, the nature of the climate, soil, and under earth: — circumstances which have gone far to determine the history and development of the people who have come to the country from the old world.

The continent of North America is in many ways sharply contrasted with that of Europe. The last-named land consists mainly of great peninsulas and islands, which are geographic dependencies of the great Asiatic field. It is, indeed, a mere fringe of the great Eurasian continent. North America, on the other hand, is a mass of land distinctly separated from other areas, with a relatively undiversified shore, and with an interior country which is but slightly divided into

† See Rep. Commn. Ind. Aff. (Wash., 1891) and Thayer in *Atlantic Monthly*, Oct., 1891.

isolated areas by distinct geographic features such as seas or mountain-chains. This geographic unity of the N. part of the New World is due, as is the case with all its other conspicuous features, to the geological history of the country; it will therefore be well to preface the account of its detailed features by a very brief description of the steps by which its development was brought about.

In the Laurentian age, the earliest epoch which geologists can trace in the history of the earth, the continent of North America appears to have consisted of certain islands, probably lying in the neighbouring seas beyond the present limits of the land, the positions of which are as yet unknown. In the Cambrian period we find the Laurentian rocks, which were formed on the older sea floors, raised above the ocean level, and constituting considerable islands, the larger of which were grouped about Hudson's Bay, there being smaller isles in the field now occupied by the Appalachian Mountains and in that of the Cordilleras, as we should term those elevations which lie between the E. face of the Rocky Mountains and the ranges which border the Pacific Coast.

From the débris of the ancient islands which prefigured the continent, together with the deposits of organic remains accumulated in the seas, the strata of the Silurian and Devonian ages were formed. These in turn were partly uplifted in dry land, thus adding to the area of the imperfect continent by the growth of its constantly enlarging island nucleus. Yet other marine accumulations, formed in the now shallowed seas, afforded the beginning of the carboniferous strata. The accumulation of these beds and the slow uprising of the land soon brought the continent to a state where there were very extensive low-lying plains forming a large part of what is now the Mississippi Valley, as well as the field now occupied by the Allegheny Mts., which then had not been elevated, and forming a fringe along the E. coast of the continent. On these plains there developed extensive bogs, which from time to time were depressed beneath the level of the sea and buried beneath accumulations of mud and sand, thus affording the beginning of the coal beds which constitute so important a feature in the economic resources of the country.

After the close of the great coal-making time the Allegheny Mountains were uplifted, and the ranges of the Cordilleras begun in earlier times were much increased in extent. From this period of the new red sandstone or Trias, we may fairly date the probable union of the original scattered islands of the continent, which had now taken much the shape it has at present. The great interior sea, the remnant of which now forms the Gulf of Mexico and which in the earlier ages had divided the Cordillerean from the Appalachian lands, still extended as a narrower water far to the N., but in the Jurassic and Cretaceous time, this Mexican Sea shrank away with the uplifting of the land, and its place was occupied by a vast system of fresh water lakes stretching along the E. front of the Rocky Mountains.

These basins endured for many geological periods; they were, however, gradually filled with the detritus from the mountains of the West.

In the Tertiary period, the last great section of geologic time, North America gradually assumed its existing aspect. The Great Lakes before mentioned were gradually filled, the lowlands of the S. states and of the Atlantic coast to the S. of New York rose above the sea, and the mountains of the Cordilleras gained a yet greater measure of elevation. In the closing stages of this Tertiary time there came the glacial epoch, during which the ice sheets, now practically limited to Greenland and Alaska, were extended so as to cover nearly one-half of the continent, the margin of the snowy field being for a time carried as far S. as the Potomac and the borders of the Ohio River at Cincinnati, mantling the region to the N. with an icy covering having a depth of several thousand feet. At this stage of the geological history the N. portion of the land was deeply depressed, while the S. portion was much elevated. When the ice went off, the continent, at least in its E. part, remained for a time at a lower level than at present. Only in what we may term the present geologic day has the continent quite recovered from the singular disturbance of its physical and vital conditions which the ice time brought about.

One of the most important results of the geological history of North America has been the development of this continent to a point where its surface is characterized by certain broad and simple topographic features. It is, indeed, on many accounts, the most typical of the greater land-masses. The eastern and western shores are bordered by tolerably continuous mountain ranges: those facing the Atlantic extend though with various interruptions from Greenland to Alabama; those next the Pacific from the peninsula of Alaska to Central America. South of the Rio Grande these Cordilleras form the attenuated mass of the continent in which lie Mexico and the states of Central America. Between these mountain ranges and the neighbouring oceans there is a relatively narrow belt of plains or low-lying valleys. The principal portion of the continental area, however, lies between these mountain systems in the form of a great shallow trough. The southern half of this basin constitutes the great valley of the Mississippi. Its northern portion is possessed by various river systems draining into the Arctic and Atlantic Oceans, of which the Mackenzie and the St. Lawrence are the most important. The last named river system is peculiar in the fact that it is the greatest stream in the world which is fed mainly from lakes.

If we could contrast this over-brief story of the geological development of North America with a similar account of the leading events which have taken place in Europe, we should readily note the fact that the former land has had a relatively simple history. Fewer mountain systems have been developed upon it, and consequently its shores lack the great peninsulas and islands which are so characteristic a feature in the old world. To this same architectural sim-

plicity we may attribute the generally uniform character exhibited by the interior portions of the continent.

The conditions of the ancient history of North America have served to provide its fields with an abundant and precious store of the materials which fit its lands to be the seats of a varied and complicated economic life. Of these underground resources we can only note the more important. First among them we may reckon the stores of burnable material: — coals, petroleum, and rock or natural gas, substances which in our modern conditions have come to be of the greatest consequence to mankind. The *Coal Deposits* of North America are on the whole more extensive, afford a greater variety of fuel, and are better placed for economic use than are the similar deposits of any other continent. They range in quality from the soft, rather woody, imperfectly formed coals known as lignites, to beds which afford the hardest anthracites, coals so far changed from their original condition that they burn without flame much in the manner of charcoal. The greater part of the good coals lie in the region to the E. of the Mississippi, while the lignites and other poorer fuels are found in the country between that great river and the Pacific Ocean. The excellent coals both of the E. and W. were generally formed during the carboniferous age; the lignites and other poorer materials of this nature were almost altogether accumulated in the Cretaceous and Tertiary periods.

The *Petroleum* of North America occupies a larger portion of the country and affords a more ample supply of the material than those of any other land save the region about the shores of the Caspian Sea, known as the Baiku district. The best of the American wells lie in the basin of the Ohio River. Traces of similar deposits occur at various points in the Cordilleras and on the coast of California. All the more valuable petroleum deposits of America lie in rocks below the lowest coals in strata of the Devonian and Silurian ages, where they were formed by slow chemical change of the fossil remnants of ancient marine life. The abundance of these accumulations of petroleum in North America is due to the fact that the beds in which the fluid has been formed lie in horizontal attitudes, in a position where the fluid has been retained by the unbroken strata notwithstanding the great pressure of the rock gases which tend to drive it forth to the surface.

The *Natural* or *Rock Gases* which of late years have played an important part in the industries of this country, serving for fuel and for illuminating purposes alike, owe their origin and preservation to the same conditions which have brought about the accumulation of petroleum. These substances, though the one is fluid and the other gaseous in form, are chemically akin, and are indeed only varied results of the same natural actions. They are both alike often formed in rocks where the strata abound in fossils. The reason why these materials do not often occur in Europe is probably due to the

fact that the strata of that country have been so much ruptured and tilted by the mountain-building forces, which have affected almost every part of that country, that oil and gas have alike escaped to the surface of the earth by passages which these dislocating actions have provided for them. In North America on the other hand, where vast areas of strata still lie in substantially the same position in which they were formed, the substances have been to a great extent retained in the rocks where they were produced.

The store of rock gases known to exist in this country will probably be exhausted within twenty years of the present time. The resources in the way of petroleum are also likely to be used before the middle of the next century. The fuel in the form of coal exists in such quantity that there is no reason to apprehend a serious diminution of the store for many centuries or perhaps even thousands of years to come.

Next in importance after the fuels of North America, we may rank the ores from which *Iron* can be manufactured. These exist in great quantity in almost every important district of the continent, and at many points they are very advantageously placed in relation to supplies of fuel and to the transportation routes. The largest, though not the richest, store of iron ores in North America lies in the district of the Appalachian Mountains between the Potomac River and S. Alabama. In this field the ores have the general character of those which have afforded the basis of the great industry in Great Britain. As in that country, these Appalachian deposits are very favourably placed in relation to coke-making coals with which they are to be smelted. The other conditions for the development of the great industry are in this district also very favourable, so that experts in the matter look to this field as likely to be the principal seat of iron production in North America.

Next after the Appalachian field, the most important deposits of iron ore in North America lie in the region about the head of Lake Superior. In this field the deposits are of a very high grade, but they are much more costly to mine than those before referred to and they are unfortunately far removed from the coking coals of Pennsylvania and Kentucky, which are the nearest good fuels to the Lake Superior mines. It is now the custom to convey these ores mainly to the coal district about the headwaters of the Ohio River. The Cordillerean district abounds in iron ores, but as these Western iron ores are rarely near coals fit for use in furnaces, they cannot be regarded as of great economic importance. The ores from the region to the E. of the Mississippi afford the basis for an iron manufacturing industry which has already equalled that of Great Britain, and at its present rapid rate of growth gives promise of exceeding that of all European countries before the end of the present century.

The *Copper Deposits* of North America are to be ranked as next in importance to those which afford iron. Ores of this nature are

extensively diffused in the older rocks of this country, but it is only in N. Michigan and in the Cordilleras that they have been proved to have great economic value. In the Michigan district the material occurs in a metallic form, and in such abundance that, notwithstanding the very high price of labour in that region, the product of the mine goes to the world's markets under conditions which enable the establishments to compete with the production of any other country. In the Cordilleras of North America the metal occurs, as is usual in other lands, in the form of ordinary ores, but the deposits are of such great extent and richness that they have proved very profitable.

The mines producing *Zinc* and *Lead* are now practically limited to Missouri and the Cordilleras, though a portion of the former metal is still obtained from New Jersey. A large part of the lead which now enters the markets of this country is obtained from the silver ores of the Rocky Mountain district, and as it is won as a bi-product, it is produced at a low cost.

The *Gold and Silver Fields* of North America, which have considerable economic value, are altogether limited to the mountainous district in the W. part of the continent. The S. portion of the Appalachian system afforded in the early part of this century, with the cheap slave-labour of that country, profitable mines of gold, but efforts to work the deposits since the close of the Civil War have proved universally unprofitable. There are a few successful gold mines in Nova Scotia, but they are commercially unimportant. The evidence goes to show that the Cordillerean region alone is to be looked to for large supplies of the precious metals.

Various other metalliferous ores exist in North America and play a subordinate part in its mining industry. *Tin* occurs at many points, but it has so far proved unprofitable to work the deposits, the main reason for the failure being the cost of labour involved in the work of production. Doubtless the most important of these less valued elements of mineral resources which the continent of North America affords is the group of fertilizing materials which of late years have come to play so important a part in the agriculture of this and other countries. The *Phosphate Deposits* of the S.E. part of the United States, particularly those of South Carolina and Florida, are now the basis of a large industry.

The soils of North America have, as the agricultural history of the country shows, a prevailingly fertile nature. In the region to the E. of the Mississippi within the limits of the United States over 95 per cent of the area affords conditions favourable for tillage. This region of maximum fertility extends over a portion of the area to the W. of the great river, but from about the 100th meridian to near the shores of the Pacific the rainfall is prevailingly insufficient for the needs of the farm. Crops can in general only be assured by a process of artificial watering, and the whole of the great Cordillerean field within the limits of the United States, and a large portion of that area in the

republic of Mexico, a district amounting to near one-third of the continent, which would otherwise be fit for agriculture, is rendered sterile by the scanty rainfall. On this account the continent has as a whole less arable land in proportion to its size than Europe; moreover, more than one-fifth of its fields lie so far to the N. that they are not suited for agriculture; thus not more than three-fifths of the continent is naturally suited for husbandry. It should be noted, however, that the fields richest in metals lie in the arid districts, and that in this part of the realm there are areas aggregating more than 50,000 sq. M. which can by irrigation be made exceedingly productive and will afford a wide range of crops.

The climate of North America is prevailingly much more variable than that of Europe. Between the arctic regions and the warm district of the tropics, there are no mountain barriers, and the land is so unbroken by true seas that the winter winds are not tempered or obstructed in their movement. The result is that the summer heat, even as far N. as the northernmost cultivated districts of Canada, is great and commonly enduring, while the winter's cold occasionally penetrates to the borders of the Gulf of Mexico, even S. Florida being liable to frosts of sufficient severity to destroy the more sensitive tropical plants. The only portion of the United States which has tolerably equable atmospheric conditions, is the coast belt of the Pacific from San Francisco to the S. This region has a climate in many ways resembling that of N. Africa.

The peculiarities of surface and of climate which result therefrom give rise in North America to certain classes of storms which are little known in any other land. In the region of the Cordilleras great whirling movements of the air arise in places where the barometer is low, which move with considerable speed to the E. across the country. Passing beyond the Atlantic coast-line, these great circular storms, which generally have a diameter of several hundred miles, continue their way over the ocean, and often after a due time appear on the coast of Europe. In the landward part of their journey these storms rarely have such severity as to damage property. It often happens, however, especially during the spring season, that on the S.E. face of these advancing cyclones, small but very intense whirlings of the air are produced, which are known as tornadoes. These accidents often give rise to winds of singular intensity, movements of the air so energetic that they may disrupt the stoutest buildings, throw railway trains from the track, and by the upward rush of the atmosphere in their centres lift the bodies of men and animals to the height of hundreds of feet above the earth. Fortunately the paths of these tornadoes, or hurricanes, as they are locally called, are relatively very narrow, and the distance to which they course in their N.E. movement is short. The breadth of their destructive path rarely exceeds half-a-mile, and the distance to which the destruction is carried is generally less than twenty miles. Although occasional

visitations of this nature have been experienced throughout all the United States to the E. of the Rocky Mountains, the district in which they are really to be apprehended and where they are likely to prove in a considerable measure destructive to life and property, appears to be limited to the N. and central parts of the Mississippi Valley, and the basin of the Ohio River north of Central Kentucky.

The waters of the Gulf of Mexico and of the neighbouring Carribbean Sea, as well as the shores of the main land and islands of that realm, constitute a field where another class of air-whirlings, the marine cyclones, also termed hurricanes, are frequently developed. These storms are much more enduring and more powerful than those formed upon the land; they often march from the regions where they are developed slowly up the Atlantic coast of the United States until they gradually penetrate to a realm of the sea where the air next the surface is so cool that they no longer receive the impulse which led to their development. These marine cyclones find their parallel in similar atmospheric convulsions which affect the Indian Ocean and the China Seas. In both realms the disturbance of the atmosphere is due to the heated condition of the air next the surface of the ocean, and its consequent upward movement into the upper parts of the aerial realm. The whirling movement is the simple consequent of this ascent of the air through a narrow channel. It finds its likeness in the whirling imparted to the water in a wash-basin when it flows through the opening in the bottom of the vessel.

Another class of atmospheric actions in a measure peculiar to North America is found in the 'Cloud Bursts', or sudden torrential rains, which occasionally though rarely occur in the E. portion of the Cordilleras. In these accidents, though the region is on the whole arid, the rain occasionally falls over an area of limited extent with such rapidity that the air becomes almost unbreathable, and dry stream beds are in a few minutes converted into raging torrents. Although in their characteristic intensity these cloud bursts are limited to certain parts of the W. mountain district, a conspicuously rapid precipitation occasionally occurs in the more E. portion of the United States.

In its original state, that in which it was found by the first Europeans who landed on its shores, the E. part of North America was seat of the greatest forest of broad-leaved trees, intermingled with pines and firs, which the world afforded. Although this noble Appalachian forest has suffered much from axe and fire, it still in part remains in its primæval state, forming a broad fringe of arboreal vegetation from the Gulf of St. Lawrence to Central Texas, extending inland to the central portion of the Ohio Valley and up the Mississippi to near its confluence with the Ohio and Missouri Rivers. To the N. and W. of this great woodland lay a region of generally treeless plains. The district of the Cordilleras was scantily forested, and along the Pacific Coast and on the W. slope of the Sierra Nevada from Central California to the N., extended noble forests of narrow-leaf

trees. Across the N. part of the continent the heavy growth of timber, somewhat stunted by the severity of the climate, extended from the Pacific to the Atlantic shores. As a whole the continent bore an ampler mantle of forest growth than any part of the old world beyond the limits of the tropics.

The traveller who for the first time visits North America should take care not to hamper his vision by pre-conceptions as to the beauty of natural scenery based upon the physiography of the old world. As a whole the aspect of the N. continent of the new world differs greatly from that of the old. In the former land there are none of those admirable combinations of snow-clad mountains and fertile valleys which lend such a charm to the scenery of Switzerland. In general the surface lacks those elements of detail which contribute so much to the picturesque aspect of a landscape. The scenery of North America is generally characterized by a largeness of mould and simplicity of outline dependent on the relatively uncomplicated nature of its geological history. The plains are vast and but little varied by elevations. The mountains of the Appalachian district have a singular continuity in their ridges, which, though it gives them a certain architectural beauty, deprives them of detail The grander elevations of the Cordilleras, though attaining to about the altitude of the Alps, rise from a much more elevated base than the Swiss mountains, and therefore make a less striking impression upon the eye. At few points on the continent do mountains or even considerable hills come near to the coast, and the result is that the shore line has a monotony of aspect which is much contrasted with the sea margin of Europe.

The lovers of picturesque beauty in nature may well seek in North America the charm of its primæval forests, the beauty of its great plains when they bear their spring-time flowers, and the attractions which are presented by the greater rivers with their noble valleys and often marvellous gorges. Of these cañons or defiles cut by the streams, those of the Cordilleras are by far the greatest in the world. That of the Colorado and that of the Yosemite, each in its way eminently peculiar, and differing one from the other in origin and in aspect, are doubtless the most striking features of the continent, for they are unequalled in any other land.

The history of the aborigines in North America shows that this continent was only moderately well fitted for the nurture of races in their steps of passage from the primitive condition of man towards the ways of civilization. Though a remarkably fertile region, and abounding in game, the land contains none of those fortunate peninsulas, or districts walled about by mountains or the sea, which in the old world have afforded such admirable cradle-places for infant states Thus it came to pass that in this country any tribe which attained some advance in civilization and became worth plundering was subjected to unending incursions from the neighbouring more savage folk. Only in Mexico and Central America did any of the primitive tribes advance beyond the stages of barbarism. The better fortune of those countries was probably due in the main to their more secluded positions. Moreover in North America the primitive people found no animals which were well suited for domestication or could render much help to man. The only beast which gave much promise of such aid, the bison, though a domesticable animal, has proved on the whole intractable and unfit for the uses of man.

The united conditions of the continent which made it on the whole unsuited for the nurture of peoples in the first stages of their advance has been an advantage to the European folk who have been transplanted to this part of the new world. The simple geographic character of the country has made access to its different parts relatively easy, and brought about its subjugation to the uses of man with marvellous rapidity. Some have feared that owing to the lack of diversities in the conditions of the continent, the people developed upon it would have an excessive uniformity in character and quality. The history of the populations, however, seems to show that the variety in climate, in soil or under-earth products,