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OF THE
BRITISH ISLES

ARCHIBALD GEIKIE



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AN ELEMENTARY

G E O G R A P H Y

OF THE

BRITISH ISLES

BY

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P R E F A C E

SOME words of explanation may be offered in adding another to the long list of already published "Geographies" of the British Isles. The present little work has been prepared in accordance with the plan of instruction advocated in my *Teaching of Geography*. It is mainly designed for children who have already acquired an elementary knowledge of what geography is, not from class-books, but from practical instruction based on the topography of their own district.

As the map must ever be the groundwork of lessons in geography, this class-book is written as a kind of guide to the map, and is not meant to be used merely by itself as material to be learnt by rote. In the class-room the large wall-map will be constantly referred to, and at home the pupil will have his little hand-map or atlas. The cheap elementary atlas prepared in connection with the present Geographical Series by Mr. Bartholomew will be found of essential service in the following lessons.

The physical features of a country form the

fundamental part of its geography, and should always receive the first attention alike of teacher and scholar. Special prominence has been given here to those of Britain, and I have indicated some of the many ways in which their influence on the history and progress of the people may be shown.

The meaning and value of geography and its perennial interest should be strenuously inculcated. Mere lists of names that stand linked with no idea or association are to be avoided, at least in the earlier stages of geographical teaching. Each place should be connected with some physical feature, some fact in history, or some other human interest, so that the memory may be burdened as little as possible with mere isolated words. In the brief outline given in the following pages I have tried to follow this method; and in filling in fuller details, the teacher will do well to bear it still in mind. Undoubtedly, to the want of recognition of this obvious principle, the backward state of geography in this country is largely to be ascribed. I have placed within square brackets many numerical statements which are of value for purposes of comparison between different areas and places. The teacher will use his own judgment as to the extent to which he will ask his pupils to commit these figures to memory.

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GEOGRAPHY OF THE BRITISH ISLES

I.—THE BRITISH ISLES

COMPARED with other countries, the British Isles, as shown upon a globe or on a map of the world, are seen to be comparatively small in size. They might all go into a mere corner of Russia ; and they cover but half of the area of some of the United States of America. As regards number of inhabitants, too, they are far from standing at the head of the nations. On the Continent of Europe, they are surpassed in this respect by Russia, Germany, France, and Austria. In America, the United States have a much larger population. In Asia, China possesses more than ten times the number of inhabitants. And yet in the history of the last four hundred years no people has played a more important part than the people inhabiting the British Isles. They have not merely taken a foremost place among their European neighbours, but have extended their influence into every corner of the globe, and have built up a wider empire than has ever before existed.

When we try to discover the causes which have led to this remarkable pre-eminence we learn that one of the most important of them is to be found in the geography of the country; in other words, in that fortunate position on the earth's surface, and those advantageous circumstances of topography, climate, and mineral wealth which have enabled the British people to make such strides in the general competition of the nations.

Geographical Position.—By the geographical position of a country is meant the place which the country occupies on the surface of the earth. In considering the geographical position of the British Isles we have two important questions to bear in mind: first, the place of the British Isles (or Britain, as the whole group of islands may be called for the sake of brevity), with reference to the rest of the surface of the earth; and, second, their place with reference to the Continent of Europe. This subject is made much simpler and more interesting if it is worked out upon a school-globe.

1. Placing the globe in such a position that the British Isles appear in the centre, you can see by far the largest part of the land of the globe—the whole of Europe and Africa, nearly the whole of Asia, and the whole of the New World except the southern end of South America. Now turning the globe round so that the part exactly opposite to Britain, or its *Antipodes*, comes into the centre, you will look on the largest area of water, all the land that is visible being the southern part of South America, the terrestrial parts about the South Pole, Australia, New Zealand (which lies near the centre of what you see), the islands to the south-east of Asia, and the

groups of islets scattered across the vast Pacific Ocean. You thus learn that the British Isles are situated in the very midst of the habitable part of our planet.

But notice further, that although placed so centrally, Britain does not lie in the heart of a wide continent. Had such been its position, its people might have been as uncivilised and unprogressive as the tribes which inhabit the interior of Africa or of Asia. It stands, on the contrary, at the outer margin of a continent and on the edge of an ocean. Observe, however, that this ocean is the narrowest of all the oceans. Its borders are for the most part inhabited by civilised communities ; for the peoples of Europe have taken possession of the whole of the west side of the Atlantic, and have planted colonies on the east side all along the coast of Africa.

Now think how remarkably advantageous must such a geographical position have been in enabling an active people to take a leading place among the nations. So central a situation, in the midst of the habitable part of the earth, has allowed and encouraged the inhabitants of Britain to come into relations with other countries, and more particularly to hold easy intercourse with all the maritime parts of Europe. It has further prompted them to sail forth as discoverers and conquerors. A few hundred years ago the whole of the New World and a large part of the Old World were unknown. In the voyages and circumnavigations by which the surface of the planet has since then been mapped out and made known, the islanders of Britain have had a large share. They have taken possession of a great proportion of the territories which have been discovered.

They have planted their colonies in all parts of the world, and have carried with them their laws, their language, and their institutions. They have done more than any other nation to extend the commerce of the world, and thus to draw the various peoples of the earth together by bonds of peaceful intercourse. From the British Isles as a centre, ships bear to every corner of the globe the manufactures of this country, and to the same centre they return laden with the produce of every clime.

To aid in fixing in the memory this remarkably central position of Britain, it is useful to follow on the school-globe the course of some lines of meridians and parallels. Take, for example, the meridian of Greenwich, and tracing it from pole to pole notice what countries it passes through. Observe also a few of the parallels of latitude that cross the British Islands. Latitude 50° N., for example, traverses the extreme southern part of England; latitude 55° N. runs through the north of Ireland and of England and the south of Scotland; latitude 60° N. cuts the Shetland Islands. Trace each of these parallels round the globe, and note the countries through which they respectively pass. You will thus learn what parts of the globe are at the same distance as Britain from the equator on the one hand, and from the North Pole on the other.

2. Now turn to the map of Europe, and take note of some of the more obvious geographical relations of Britain to the Continent. (1.) Observe that the British Isles lie off the middle of the western margin of Europe, and are thus within easy reach of the Continent by sea. In old days, when there were no other modes of land-conveyance than pack-horses and

waggons, communication between the countries in Central Europe was difficult and tedious. But those countries which possessed a sea-board had a much easier and more rapid means of transit in boats and sailing vessels. The people of Britain, however, had this advantage over all the surrounding nations in that the whole margin of their country being a sea-board, they could sail from any side of it away to the North Sea and the Baltic on the one hand, and to the far shores of the Mediterranean Sea on the other.

(2.) But mark also that the British Isles lie immediately opposite to the great central densely-peopled plains of Europe. Notice on the map that the Pyrenees, Alps, and Carpathian Mountains form the southern barrier of a vast tract of lowland, which, watered by many large rivers, including the Seine, the Rhine, the Oder, and the Vistula, is bounded to the north by the Baltic Sea and the highlands of Scandinavia and Finland. It is on this wide plain that the greater part of the population of Europe is crowded, that the chief industries are carried on, and that the import and export of commodities are most extensive. Hence, for commercial purposes, Britain's position with respect to the rest of Europe is a singularly fortunate one.

(3.) But the relation of this country to the Continent will be better understood if we learn to recognise that the British Islands are really a part of Europe, and that they were not always separated from it by a tract of sea. The high grounds of Scandinavia sink under the sea at the southern end of Norway; but the same rocks of which they consist are continued southward, and rise out of the sea again to

form the hilly country of the Scottish Highlands and the west of Ireland. Again, the wide European plain sinks under the waters of the North Sea along the margin of Denmark, Holland, Belgium, and northern France; but on the farther side of that sea it reappears in the undulating lowlands of the east and south-east of England. So shallow is the basin of the North Sea that if it were raised up only 600 feet it would all become dry land, and would then be seen to be merely a part of the vast European lowland. Such was its condition when the present kinds of vegetation and of animals first came into Britain, for these are the same as those of the opposite countries of Europe, and they must have travelled into Britain when the intervening ground was still land. It is tolerably certain too that the earliest tribes of men found their way into this country before it was separated from the mainland. This separation was probably brought about mainly by a sinking of the ground, which allowed the sea to flow over tracts that had previously been dry land.

(4.) There is still another feature in the position of Britain with reference to the Continent that deserves to be considered. It is only at its south-eastern end that this country approaches the mainland, and there the two opposite coasts of England and France come so near—only 21 miles apart—that on a clear day the cliffs of each side can be quite well seen from the opposite shore. The narrow intervening strip of sea which is now crossed every day by steamboats in little more than an hour, is not so wide as to interpose a great barrier between the countries on either side of it. And so it has been

made use of from the earliest times of history as the main line of communication, both for warlike conquest and for peaceful commerce. The civilisation of the rest of Europe has passed readily and rapidly into Britain across this little breadth of sea. But on the other hand, these 21 miles of salt water have served as an effectual protection against frequent invasion by hostile armies. Where one country comes in immediate contact with another, as France and Germany do, there is a risk of occasional war, and of the marching of military forces across the frontiers. Hence the enormous standing armies and the chains of border fortresses all over the mainland of Europe. But no foreign foe can enter Britain except by sea, and this country has consequently for many centuries been free from serious invasion and panics of war.

We thus understand how true is the assertion that some of the more striking features in the history of the British people can be traced to the influence of the geographical position of the country. Living on islands, and therefore near the sea, the inhabitants naturally grew into a nation of sailors. Their love of the sea led them to become navigators and discoverers of new lands in many parts of the globe. The small size of their island-home and the crowding of their population compelled them to roam abroad and found colonies elsewhere. Their command of the sea, and their central position on the habitable part of the earth, made them traders also, and led to the establishment of their world-wide commerce. And so we perceive that from the little mother-country of the British Isles there has sprung the greatest maritime empire which the world has yet seen.

Outer Form and Size.—Opposite the western coast of Europe the group of the British Isles stretches for a distance of about 700 statute miles like a great breakwater protecting the Continent from the storms of the Atlantic Ocean. If all the scattered islets and sea-swept rocks were counted, the group would be found to number many thousand separate portions of land. The total area of the British Isles amounts to nearly 121,000 square miles [or 77,790,000 acres], being about 83,000 square miles less than France, 91,000 square miles less than the German empire, and only about one-fifteenth part of the size of Russia in Europe. Though the group consists of so vast a number of separate pieces of land, there are only two main islands. Of these the larger, known as Great Britain, and comprising the two old kingdoms or countries of England and Scotland, contains 88,006 square miles, while the smaller, called Ireland, contains 32,531 square miles. Before entering upon the geography of each of the three kingdoms or countries it is desirable to look at some of the characteristics of the whole group of islands.

1. The general form and direction of the British Isles must be studied on the map. It will be observed that these islands form a somewhat irregular triangle, the base of which, upwards of 500 miles in length, lies to the south, while the apex points to the north and ends off in the Shetland Isles, at a distance of some 700 miles from the base. It is only at the eastern end of the base of the triangle that Britain comes near to the mainland of Europe. The intervening sea is so shallow that if St. Paul's Cathedral [425 feet high] were put down in the middle of the channel, more than half of it would stand out

of the water. From this narrow passage, called the Strait of Dover, the sea widens south-westwards into the English Channel, and expands northwards into the wide shallow basin of the North Sea. It will be seen that starting from the Strait of Dover, the coast-line of Britain and that of the Continent rapidly recede from each other. At the far north they begin to draw a little nearer again, but the distance of the Shetland Isles from the coast of Norway is still nearly 200 miles.

Just as Britain and the mainland of Europe were once united, and as the chalk hills of Kent are undoubtedly a prolongation of the chalk hills of northern France, so Ireland and Britain at some ancient time formed one continuous piece of land, and the hills in the north-east of Ireland are a continuation of those on the opposite and nearest shores of Britain. The narrow intervening strip of sea, called the North Channel, is less than 14 miles across at its narrowest part, but widens southward into the basin of the Irish Sea, which, where narrowest, is about 60 miles in width, and varies in depth up to about 500 feet.

Though from the general triangular shape of the group of islands, the eastern and western coast-lines approach each other as they run northward, they do so with remarkable irregularity. The eastern sea-board is least indented. The wide basin of the Irish Sea and St. George's Channel cuts off Ireland from the rest of the group, while along the western shores of Ireland and Scotland the waters of the Atlantic penetrate by numerous inlets far into the land, and isolate many portions into islands.

To fix in the mind the relative positions of the

different parts of the British Isles, it is useful to trace a few lines of latitude and longitude, and to fix in the memory the names of some of the leading places on each parallel and meridian. The advantage of this practice will be seen from the extraordinary misconceptions that prevail as to the relative geographical positions of even the most familiar places in the country. When people speak, for instance, of the east coast and the west coast of Great Britain, they are apt to assume that places on the western seaboard must lie to the westward of places on the eastern. But in reality the eastern coast-line has a general trend from south-south-east to north-north-west, while the western coast-line runs on the whole towards north-north-east. Not only so, but the sea on both sides of the island makes wide and deep indentations into the land. Hence one side of the country actually, as it were, overlaps the other side. Some well-known places on the east coast lie really farther west than places on the west coast. Edinburgh, for example, is farther west than Liverpool, and even than Bristol. Again, Inverness on the east coast is as far west as Plymouth, one of the most westerly towns in England. The meridian of 4° west of Greenwich, which passes a little east of these two places, runs very nearly through the centre of the British Isles.

2. As Britain consists of a group of islands, and as the sea runs in many long inlets far into the land, no inland place can be very far from the sea. This "insular character," as it is called, is a most important fact in the geography of the country, for it has notably affected the character of the climate and the pursuits of the people. From the map you

will see that Great Britain at its broadest part, between Cardigan Bay and Great Yarmouth, is about 250 miles in width, and that at its narrowest part there is a breadth of only some 25 miles between the inlets of the eastern and western seas at the Forth and Clyde. It is evident that no place in the island is more than about 65 miles from the sea, and that the vast majority of places are very much less than that distance. The port of London on the east side of the country is little more than 100 miles from the port of Bristol on the west side. That the inhabitants of Britain should, from the earliest times, have been fond of the sea and have become active sailors, is only what might have been expected from the character of their fatherland. The effect of the insular situation of the country on its climate is referred to on p. 15.

General Surface Features.—In no part of the British Isles is there any true mountain-chain—that is, a belt of lofty ground which, like the Alps, has been pushed into its present position by some great movement or convulsion of the solid crust of the earth. We speak loosely of the mountains of Wales and Scotland, and very picturesque and striking many of them are. But in the strict sense they are hills rather than mountains, and their present forms have been produced by a very different natural process from that to which true mountain ranges owe their existence.

All over the globe it is a general rule that the high grounds and marked prominences are composed of harder materials than those which are spread over the area of the lowlands and plains. Every part of the land on which rain falls and rivers flow is gradu-

ally washed down and lowered in level. Of course the harder kinds of stone can resist this process of waste better than the softer. Hence, in course of time, while the softer parts are more and more worn away, the harder portions are left projecting above them. Now this is really the key to the meaning of the position and forms of the different surface-features of the British Isles. The hills are tracts that have been left prominent, mainly because they consist of harder and more durable materials than the plains around them. All the highest and most rugged pieces of ground are made of granite, schist, grit, volcanic rocks, or other durable material, and have been gradually carved into their present forms by running water, frost, wind, and the other natural agents which are ceaselessly wearing away the surface of the land. While the hills are everywhere the result of the unequal lowering of the general surface of the country, their forms vary widely according to the nature of the rocks of which they are built up. For example, in the Highlands of Scotland, where certain ancient crystalline rocks abound, there is one characteristic type of scenery. In the dales and moors of western Yorkshire, where a totally different class of rocks prevails, the scenery is correspondingly distinct. In Antrim there is still another variety of rock, and consequently a third variety of topographical features.

Some interesting and important considerations are suggested by the distribution of the high and the low grounds of Britain, especially with regard to the history and progress of the people. Thus, the eastern, midland, and southern districts of England are, for the most part, low and fertile ground. As we have already seen (p. 5), they are really a

continuation of the great plain of Central Europe. But almost the whole of Scotland is hilly, much of it is comparatively unfertile, and its southern high grounds, prolonged into the north of England, run down to the very centre of the country, while nearly the whole of Wales is also a bare upland region. Now mark how decisive must have been the influence of this distribution of the high and low grounds, and of the barren and fertile soil upon the national development. The chief area of cultivable lowlands lies in the south-eastern division of the island, where the climate is driest, where the island is broadest, and where there is the shortest and easiest access from and to the Continent. Thus by far the best part of Britain for human habitation lay open to the races who have in succession gone thither from the mainland of Europe. Let us try to picture to ourselves what would probably have been the history of the country if the topography had been reversed—that is, if the fertile plains had lain far away to the north and west, where the climate is wetter and more boisterous, and if ranges of high, rugged, and barren hills, like those of the Scottish Highlands, had been placed opposite to the shortest passage from the Continent. There would then have been little to tempt invaders from the richer lowlands of Europe. Cut off from free intercourse with continental peoples by such a mountainous barrier, the British tribes would have been isolated, and their civilisation and advancement would almost certainly have been retarded for centuries.

The distribution of high and low ground over the surface of Britain has had another remarkable influence upon the human population of the country. As

the rich lowlands of eastern and southern England tempted invasion from the mainland of Europe, the older inhabitants were driven back to the hilly country in the west and north, while the later comers possessed themselves of the more fertile plains. Notwithstanding the many changes which the lapse of centuries has brought about, this grouping of the races that have peopled Britain is still to be traced, as will be more particularly mentioned farther on (pp. 21, 72, 73, 90).

To one other effect of the distribution of the surface-features of Britain upon the fortunes of the people allusion may here be made. The fertile lowlands were naturally brought by degrees into cultivation, and the people who dwelt on them became farmers. Agriculture thus grew to be the main occupation of the inhabitants of the larger part of England. But in the more mountainous regions, where the inclement climate and scanty soil offered little inducement to cultivate the land, the people for many centuries remained rude hunters of the wild animals which lived in these rugged retreats. They were apt to take the supplies which they needed by sweeping down upon their richer and more civilised neighbours on the plains, and carrying off corn and cattle. The progress of the nation has softened down the differences between mountaineer and lowlander, but the original influence of topography has not wholly disappeared. The lowlands remain the great farming districts, and the hills, where unfit for the rearing of sheep and cattle, are still left to the wild animals, and serve as game preserves—grouse moors and deer forests.

Closely connected with the surface-features is the

distribution of minerals in the rocks beneath the surface. And here again, we perceive a striking influence of the physical characters of the country upon the inhabitants. Since the introduction of steam as the motive force in machinery the use of coal for fuel has enormously increased. Now one of the fortunate circumstances in the physical structure of Great Britain is that the country possesses numerous and extensive beds of coal. The districts where this mineral occurs have naturally become the centres in which most of the steam machinery of the present day has been erected. Hence the various national industries in which steam machinery plays a leading part have tended to establish themselves on or near to the supplies of coal. The thousands of workers who gain their livelihood by these industries have consequently been drawn together to the different manufacturing centres. Districts which a century ago were entirely rural and thinly populated are now densely inhabited, and murky with the smoke of hundreds of steam-engines. And thus alike by the grouping of the hills and plains, and by the arrangement of the minerals underground, the present distribution and avocations of the people have been powerfully influenced.

Climate.—Among the various circumstances that make up the “geographical conditions” of any country one of the chief is undoubtedly Climate, which, inasmuch as it regulates the character of the vegetation and animal life, determines the suitability of the region to be a dwelling-place for man. The climate of the British Isles is not the least of the advantageous conditions in which their inhabitants have been placed. If distance from the equator had been

the only determining cause of climate, then Britain should have had as rigorous a climate as Labrador. The winter of London would have been like the present winter of Iceland, and the winter of Edinburgh like that of South Greenland. But the fortunate position of this country, projecting so far into the ocean, has given it an "insular" climate—that is, one of moderate heat and cold. Places on the same latitude in the heart of Europe have, on the contrary, a "continental" climate—that is, one of extremes, with hot summers and cold winters. But not only is the British climate tempered by the proximity of a vast surface of ocean,—it is made far warmer than it would otherwise be by the great warm current of the Gulf Stream, which, by warming the overlying air, allows genial south-westerly breezes to become the prevalent winds. In early spring, when the east wind blows, the temperature falls, because the air comes across cold and dry from a wide snow-covered continent. The western parts of the British Isles, being nearer the ocean, have a milder climate than the eastern parts, which, lying nearer to the European mass of land, approximate more nearly to the Continental climate. The summers are warmest in the south-east of England, where the July temperature averages 64° Fahr., and coolest in the extreme north, where it is 11° lower. The winters are mildest in the south-west of Ireland and England, where the temperature of January averages about 45° , and coldest along the east coast of Scotland and England, where the mean temperature of the same month is about 38° .

Another consequence of the proximity of Britain to a large oceanic surface is that the climate is moister than that of the opposite mainland. The western

parts of the country, being nearer to that expanse of water, are wetter than the eastern parts, and as hills intercept the moisture and condense it into rain, the higher grounds are more rainy than the plains. Hence, not only from its nearness to the Atlantic, but also from its greater altitude, the western side of the country is more rainy than the eastern. The annual rainfall in the mountainous west of Scotland exceeds in some places 120 inches, or 10 feet. In the south-east of England, on the other hand, where the westerly vapour-bearing winds have passed over the largest breadth of land, the annual rainfall is only 24 inches, or 2 feet. Thus five times more rain falls every year in the north-west of Scotland than in Essex. The wettest place in the British Isles is in the group of Cumberland mountains, where the amount of rain that falls in one year sometimes exceeds 180 inches, or 15 feet.

Plants and Animals.—From the climate we are naturally led to consider, as another important element in the geography, the vegetation and animals of a country, for it is from these that the human population obtains food and clothing. The general native vegetation of the British Islands is characteristic of the temperate zone. It agrees with that of the opposite portion of the mainland of Europe—a fact which has been already alluded to as one of the strongest proofs that this country was once united to the Continent. The original or native vegetation has been to a great extent extirpated from the arable land of the country, and now flourishes freely only on unreclaimed tracts of surface, and in such lanes and hedgerows as are not too carefully trimmed. The moors and hillsides are

still covered with heather, the unenclosed parts of the lowlands are clothed with gorse and broom, the thickets are hung with wild roses and honeysuckle, while the higher mountains, especially in the north, are carpeted with arctic plants, such as clothe the hills of Scandinavia. Among the trees, the most common kinds on the lower and more fertile grounds of England and Ireland are, on the whole, the oak and beech, while the beech and ash are perhaps the most frequent in the southern half of Scotland, their place being taken farther north by the birch and the Scotch fir.

The extent of the surface of Britain which has been brought into cultivation amounted in 1887 to 47,874,369 acres, or about 64 per cent of the whole area of the islands. More than a half of this is in permanent pasture, the ploughed parts being devoted to grain (wheat, barley, oats), green crops (turnips, potatoes, mangold, etc.), clover and grasses, hops, flax, and other less important plants. Of the remaining 38 per cent of the surface, about 35 parts consist of waste land (bogs, moors and mountains), and of sheets of water (lakes and rivers), while about three parts are covered with wood.

In considering the plants and animals of a long settled country such as Britain, we should try to distinguish between the original or native kinds and those which have been introduced by man. The chief food-plants have certainly been imported into most countries where they are now cultivated, and it is doubtful where was the original home of some of the commonest of them. So too with the domesticated animals—the useful breeds of horses, cattle, sheep, and dogs.

To realise how much a civilised community may change the outer aspect of its fatherland by interfering with the native vegetation and animals, we should try to realise what Britain was like at the dawn of history, when the Roman invaders gave the first detailed account of it. At that remote time a large part of the country was covered with dense forests and impenetrable morasses, which for many subsequent centuries continued to present impassable barriers that kept the different tribes apart. Of these primeval forests hardly any traces now remain, but of the morasses the still undrained bogs of Scotland and Ireland survive as examples.

So too the native animals that met the eyes of the Roman legionaries were in many respects different from those which are now to be seen. At present there are no large beasts of the chase except red deer, and they would no doubt have been exterminated long ago had they not been protected for purposes of sport. Here and there among the mountains, a few wild cats still harbour, and foxes are not uncommon, even in regions where they are not saved from extirpation for the benefit of fox-hunters. But during the Roman occupation of Britain, herds of wild oxen pastured in the glades, wild boars abounded in the thickets, brown bears roamed through the woods, beavers built their dams across the rivers, and gangs of hungry wolves prowled over the country. One by one these native races of animals have disappeared. The last wolf is said to have been killed as lately as the year 1710.

But not only have the native wild animals been reduced in numbers or extirpated altogether. The

various animals useful to man have been brought into the country. And thus over the site of the forests where once roamed bears and wild boars, deer and wolves, there now stretch wide tracts of green pasture with herds of cattle and sheep. The dog, the hog, the horse, and the goat were introduced into the country by the successive tribes of invaders who brought these animals with them from some earlier eastern home.

Population.—At the last census, taken in April 1881, the number of inhabitants in the British Isles was ascertained to be 35,241,482. If this population were equally distributed over the whole country, there would be 291 persons on every square mile of the surface. Compared with the other countries of Europe, Britain is relatively one of the most populous. It is surpassed, however, in this respect by Holland, which has 335 persons to every square mile, and by Belgium, which has as many as 508 persons to the same area. In European Russia, on the other hand, the proportion is only 40 persons, and in the vast Asiatic portion of that Empire it sinks to no more than about two persons to each square mile.

But the population is far from being equally distributed over the country. It is scanty in the rural districts, and still more so among the barren mountainous tracts, but it is gathered thickly together in the towns and cities. More persons are crowded into London than are to be found over the whole of Scotland. There is a constant migration of the people from the rural districts into the towns, owing to different causes, among which are the introduction of machinery in farming operations, which requires

fewer agricultural labourers to be now employed, and the importation of vast supplies of cheap grain from abroad, which causes much of the land that used to be sown with corn to be now turned into pasture, and thereby dispenses with the work of the servants who were needed for the cultivation of the land, and who are consequently driven into the towns in search of employment.

Though now fused into one united kingdom, the population of the British Isles consists of several distinct races of men. The most obvious proof of these differences is to be found in the fact that at least three languages are spoken in these islands, and that in some parts of the country many people may still be found who can neither speak nor understand English. The existence of such diversities of race within so narrow a space as the British Isles affords an excellent example of the importance of geographical position in determining the distribution of the various families of mankind. Britain has been invaded and occupied by several very distinct races, of whom evidence may be seen partly in the present population and partly in topographical names all over the country.

The oldest race of which anything is known was one of short swarthy men with long heads, black curly hair, and dark eyes. They probably belonged to what is called the Iberian family, which once covered the south-west and west of Europe, and which is represented now by the Basques of the Pyrenees, and apparently also by the small dark inhabitants of Wales (called Silures by the Romans) and of the west of Ireland. Next came a much taller race, with fair hair and blue eyes, who over-

powered and mingled with the earlier people. They were Gaels, belonging to the great family of the Celts who spread themselves far and wide across Europe. They spoke the Gaelic or Irish language, and they are represented now by the Highlanders of Scotland and the inhabitants of the west and south of Ireland. After a time another Celtic tribe arrived, called Cymry, or Britons, who pushed back their forerunners, and possessed themselves of England and Wales and the south of Scotland. They spoke a different Celtic tongue, which is still used by their descendants, the present inhabitants of Wales. The Romans, though they remained masters of the country for three centuries and a half, left no permanent impress on the population; at least, any such record of their presence among the Romanised Britons of the towns was effaced by the inroads of the Teutonic tribes—Angles, Saxons, Jutes, Danes, and Norsemen, who in the course of centuries drove the Britons westward into the less fertile, moory, and hilly tracts of Devon, Cornwall, and Wales, and pushed the Gaels backward from the Scottish Lowlands into the more desolate fastnesses of the Highlands. Thus the physical features of the country fixed the limits of conquest and occupation, and serve to this day to mark out the geographical distribution of the races that form the population of the country.

Topographical names furnish much interesting information regarding the different tribes who have successively inhabited the country. No satisfactory evidence of this kind has yet been found of the earliest or Iberian people. But of the Celts, who once peopled the whole of England, abundant records remain in the names of places where only English has

been spoken for more than a thousand years. Thus, the Celtic words "afon" or "avon," a river, "uisge" or "wysg," water, are sprinkled all over England and lowland Scotland in the river names Avon, Evan (in Ireland, Owen), Esk, Usk, Exe, Axe, Ouse. The Celtic "dun," a fort, is found in the names of many towns that have been English for many a long century, such as London, Dunbar, Dumbarton, Dunggannon, Dundalk. The abundance of such topographical names would suffice to prove, even in the absence of any historical evidence, that a Celtic people preceded the Teutons in the English-speaking parts of Britain. We could even infer further that this Celtic people must have been Christian from the number of names containing the word "kil," meaning a chapel or cell, and the name of some saint to whom the cell was dedicated, such as Kilmarnock, Kilwinning.

The districts settled by the Angles and Saxons or English folk, contain abundant evidence of the distribution of the families and of the condition of the country when the settlements were made. Thus names ending in "ton" generally contain also some family name, to denote the possessors of the ton, (town, or farm). Ovington is the town of the Ofings, Berrington of the Berrings. Birmingham is the "ham" or home of the Bermarings, Buckingham of the Bocings. The words "holt," a wood or wooded hill; "shaw," a thicket; "hurst," a thick wood; "wold," plain open country, tell very distinctly how the district looked when these words came to be fixed in the topography. The abundant "hursts" in Kent (Ashurst, Penshurst, Staplehurst, Bedhurst) bear witness to the wooded state of the country in early times. The Norsemen have left their memorials in

many names containing the Norse word "ster," a dwelling (Ulster, Scrabster); in names retaining the word "ö" (corrupted into *a*, *ay* or *ey*), an island (Pabba, Scalpa, Raasay, Anglesey); in the names of promontories ending in "ness" or "nish," which is the Norse "naes," a nose or headland (Trotternish, Skipness); and in words ending in "wick" or "wich," which represents the Norse "vig," a bay (Wick, Uig, Lerwick, Berwick, Norwich, Sandwich). The Danish settlements are indicated by words ending in "by" a house or farm (Derby, Grimsby, Appleby).

The Romans left visible memorials of their presence in the great roads they made across the country, in their bridges, walled towns, camps, earthworks, and fortified walls. But even if all these tangible records were destroyed the story of the Roman occupation would still survive in topographical names. The sites of the Roman fortified towns are preserved in names which retain modifications of the Latin word "castra" a camp (Lancaster, Gloucester, Manchester, Exeter). And the course of the great highways is traceable in names containing the Latin "stratum," a paved way, which became our English word "street" (Watling Street, Stratford, Stretton).

Products, Industries, Commerce.—One of the chief sources of wealth in the British Isles lies in minerals. Coal is found in each of the three kingdoms, but most extensively in England and Wales. Iron ore occurs in many districts associated with the coal, and also in veins and masses in other places. Ores of lead, tin, copper, and zinc are mined to a large extent, and even gold is worked on a small scale in Wales. Large beds of rock-salt supply a vast amount of salt every year. There are many

varieties of building materials, such as granite, sandstone, limestone, slate. Clay of various kinds is obtained in large quantities for making bricks and pottery.

The vegetable products of the British Isles consist of the different grains or cereals (wheat, barley, oats), grasses and clovers, green crops (turnips, potatoes, mangold, etc.), flax, hops, apples, pears, garden vegetables and fruit. Owing to the free importation of corn from abroad, the cultivation of wheat is decreasing, and the land is more largely thrown into pasture. Wheat grows best in the south of England, and will not grow at all in the extreme north of Scotland, where oats and barley still thrive. In Ireland oats and potatoes are the main crops. Britain imports a large proportion of the vegetable food-products required for the population, and does not grow any in quantity sufficient to be an important article of export.

The animal products consist mainly of domestic animals (horses, cattle, sheep, pigs), and of fish caught in the surrounding sea. But they are not so abundant as both to suffice for the wants of the population and to leave a large surplus for export.

Except minerals, therefore, Britain does not yield any considerable supply of "raw materials" for export. On the other hand, a great variety and vast quantity of substances are imported both for the use of the population and to be manufactured into various articles, and to be exported to other countries. The chief imports are food-stuffs (grain, flour, sugar, tea, coffee, fish, sheep, cattle, etc.), substances connected with clothing and textile manufactures (cotton, flax, hemp, jute, silk, wool), and a large

number of materials required in the various industries of the country. The exports are also multifarious, but the chief are textile fabrics (cotton, woollen and worsted, linen and jute goods), manufactured iron and steel, machinery and coal.

The trade of Great Britain and Ireland with other countries has now attained enormous dimensions. The total value of the imports in 1886 was upwards of £340,000,000, and of the exports upwards of £268,000,000. The chief countries with which this commerce is conducted are, in the order of importance—United States, British India, France, Australasia, Germany, Holland, Belgium, Russia, British North America.

To carry on so vast a commerce, hundreds of ships are daily arriving at, and departing from, the harbours of the British Isles. In 1885 the number of vessels registered as belonging to the United Kingdom was 23,662, of which 17,018 were sailing ships, and 6644 steamboats. But these numbers convey no proper idea of the carrying power of this great mercantile fleet. A ship is classed according to its tonnage, that is, the number of tons it can carry. Now the total number of sailing ships is registered as capable of carrying no less than 3,456,562 tons. But the steamboats being made more capacious, though fewer in number, can carry 3,973,483 tons. Thus the combined sailing and steam merchant navy of Britain has a carrying capacity of 7,430,045 tons.

Internal Communications.—The Romans were the great road-makers of the Old World. Some of the roads they made across Britain are still high-ways in daily use. But down to last century the

general condition of the roads in the country was bad, even around the large towns, and in the remoter districts there were only cart-tracks or bridle-paths. Good roads, however, have now been carried to the remotest corners of the land. So smooth and well kept are the main lines of high road that it has become a holiday pastime to ride on a bicycle from the Land's End to the farthest shores of Scotland.

The necessity for some cheaper mode of conveying heavy goods than by waggons along the high roads led to the construction of canals. A network of water-ways was thereby established over England and Ireland and the central lowlands of Scotland. Vessels could thus be taken across from sea to sea, and seaports on opposite sides of the island were brought into communication with each other more directly and securely than by the circuitous sea-passage.

The introduction of steam-locomotion has entirely revolutionised the internal traffic of the country, and has materially affected the distribution of the population. A network of railways has been spread over the islands, and new lines are being opened every year. These iron ways have been graven far more indelibly on the surface of the land than the Roman roads which have been so durable. For they have required the hills to be tunnelled, ridges to be cut through, embankments to be thrown athwart valleys, and rivers to be spanned by bridges and viaducts. Between the large towns the shortest available routes have been selected for them; and these routes coincide not unfrequently with those of the older high roads. Round these towns and in the mineral districts, the local lines are crowded together.

A railway map of Britain shows at a glance, by the relative proportion of the lines of railway, which are the densely and which the sparsely peopled regions.

Some idea of the importance of the railway system of Britain may be gathered from the following figures. In 1886, the total length of railways was 19,332 miles ; the number of passengers conveyed was about 72,500,000,000, the total receipts from passengers and goods amounted to more than £69,000,000, and the working expenses to upwards of £36,000,000. The total amount of capital then invested in the railways of the country exceeded £828,000,000.

II.—ENGLAND AND WALES

England, so-called from the Engle or Angles, the chief Teutonic tribe which wrested the country from the earlier Celtic inhabitants, contains 50,823 square miles ; or, if Wales is included, 58,186 square miles. It is triangular in shape, the base of the triangle lying to the south, and measuring from Land's End to the North Foreland 330 miles. Its extreme length from the Lizard Head to Berwick-on-Tweed is 435 miles. From Scotland it is bounded by a line about 80 miles long, which, beginning near the head of the Solway Firth, runs first through a tract of bog and moorland, then across the high and wild range of the Cheviot Hills, and lastly along the southern or right bank of the River Tweed. Even now this borderland between the two countries remains throughout most of its extent a desolate roadless region. In old times it formed the "Debatable Land"—a tract in which all the outlaws and robbers of the Borders sought refuge. From Wales,

England is divided by a line drawn from the estuary of the Dee to that of the Severn, and corresponding in a general way to the boundary between the high grounds to the west and the low grounds to the east. How this boundary arose has been already alluded to (p. 14).

England and Wales formed until 1707, when Scotland was united with them, one kingdom. Except along the boundary with Scotland, this kingdom is entirely surrounded with sea. On the east side lies the North Sea or German Ocean, which narrows southward into the Strait of Dover. On the south side is the English Channel, which, separating England and France, widens out westward into the Atlantic Ocean. On the west side, the northern part of the broad sea-basin between England and Ireland is called the Irish Sea, and the somewhat narrower strip of water between Wales and Ireland is known as St. George's Channel.

Surface.—Some idea of the general character of the surface of England may be formed from the fact that about four-fifths of it is cultivable land, and that less than a fifth consists of waste ground, bog, and water. In Wales the proportion of productive ground is three-fifths of the whole.

It is important to realise how low and level a great part of the country really is. If the island were sunk 500 feet below its present level, England would be reduced to a scattered group of islands, the largest of which would extend from near Derby to Hexham. Wales would form a second island of about the same size. The uplands of eastern Yorkshire would make a third, and a scattered archipelago would run from Cornwall eastwards to Kent, north-

wards to Shropshire, and north-eastwards to Lincolnshire. If the depression were only to the extent of 250 feet, the sea would spread over all the low grounds from the Tees to the Thames, and from Westmoreland to Shropshire.

In England and Wales two distinct kinds or types of hill-forms may easily be recognised. A line drawn from the mouth of the Tees to the Severn divides the country into two not very unequal divisions in which nearly all the hills of the one type are found to the west of the line, and nearly all those of the other type to the east of it.

1. In the **eastern type of hill**, which is the simpler in structure, lower in height, and less varied in outline, the eminences are for the most part long ridges, having comparatively steep fronts to the north or north-west and gentle slopes in the opposite direction. These ridges, called *escarpments*, vary in form and character according to the nature of their component materials. They all consist of limestone, sandstone, or other stone arranged in gently-inclined layers, the projecting ends of which form the steeper fronts of the hills. They are crossed by transverse valleys, through which the streams flow from the low grounds on the one side to the lower grounds on the other. The most westerly of these lines of ridge or escarpment begins on the south coast, a little east of Exeter, whence, after sweeping into the high Blackdown Hills in the eastern part of Devonshire, it runs as a broken chain of heights round to Bath, where the ridge is trenched by the River Avon. North of this point the escarpment rises in height, and becomes more continuous, towering above the plains of the Severn

into the range of the Cotswold Hills [1134 feet]. It then curves in a lower and less continuous band eastward into Oxfordshire, and northwards through Northamptonshire and Rutlandshire to the city of Lincoln, which stands where it is cut through by the River Witham. It then runs north, and sinks gently into the plain of the Humber; but on the north side of that estuary it reappears and forms the great range of heights on the east side of the Vale of York, which expanding into the wide moors of Yorkshire, reach a height of nearly 1500 feet above the sea. This most westerly of the long bands of upland that traverse the island from sea to sea consists chiefly of limestone and other rocks belonging to what is known as the "Oolitic group," and hence it is often referred to as the "Oolitic escarpment." To the west of it lies the great plain of central England. Eastward it sinks down into low plains traversed with minor ridges or escarpments parallel in a general sense with the westmost.

These low grounds, consisting mostly of clays and other soft materials, are bounded on the south-eastern side by another great line of prominent escarpment which marks where the harder white Chalk comes in. It is this rock which has determined the position and forms of the chief hills and ridges throughout the south-east of England. Starting from the coast of Dorsetshire, the band of chalk hills strikes north-eastwards to Salisbury, where it spreads out into the great upland known as Salisbury Plain [about 400 feet above the sea]. It then turns north-eastward as a tolerably continuous steep smooth bank, mounting up above the plain in front of it like a line of sea-coast, and forming the range of the Chiltern Hills

from Berkshire into Cambridgeshire. In the latter county it subsides, but it rises again to the north of the Wash, swells into the Wolds of Lincolnshire and crossing the Humber, expands into the high Wolds of Yorkshire [800 feet], finally reaching the sea in the great white cliffs of Flamborough Head.

The "Chalk escarpment," however, unlike the Oolitic, sends out long arms or ridges to the eastward. From Salisbury Plain the chalk is prolonged as a broad band through Hampshire until it divides into two branches. One of these strikes eastward, forms the range of the North Downs, and ends in the white cliffs of Kent. The other turns to the south-east as the broad uplands of the South Downs, and terminates abruptly in the bold promontory of Beachy Head. The chalk hills are generally distinguished by their undulating smooth, grassy, treeless surface,—"the long backs of the bushless downs," as Tennyson describes them.

2. In the **western type of hill** there is far more diversity of material, and consequently far more variety of form. The material consists of many kinds of rocks, which are distinguished from those of the eastern hills by being much older, by their greater hardness, and also by the want of that regular arrangement in gently-inclined beds so characteristic of the escarpments. Hence the western hills assume an endless variety of shapes. Sometimes they rise into solitary conical peaks like the Wrekin, or into connected groups of cones like the Malvern Hills, or into jagged crests and splintered precipices, as in Snowdon and some of the other hills of North Wales.

Beginning at the southern end, we find the granite

and other old rocks of Cornwall and Devon rising into groups of high bare hills, of which the principal are Exmoor [1707 feet] in West Somerset, and Dartmoor [2050 feet] in South Devon. Farther east a large mass of "mountain limestone" forms the range of the Mendip Hills in East Somerset. Northwards the Malvern Hills [1395 feet], rising from the plains of the Severn, on the borders of Herefordshire and Worcestershire, are the most graceful range of hills in England. Almost the whole of Wales is hilly ground. In South Wales the heights are generally lower and less rugged than in the north, but they rise in the huge bare uplands of the Beacons of Brecon to a height of 2862 feet. In North Wales, where numerous masses of ancient volcanic rocks occur, the hills formed of them tower into loftier and more angular forms, of which the chief are Snowdon [3571 feet], the highest point in England and Wales, Cader Idris [2929 feet], and Arenig [2809 feet].

From the midland plain near Derby a continuous mass of high ground runs as a great central ridge or backbone up into Scotland. This ridge, known as the Pennine Chain, consists chiefly of certain limestones, grits, and sandstones, which, though in many respects different from those of the eastern type of hills, yet in places present broken escarpments that recall, but in a larger and more rugged form, those of the Oolites and Chalk. They rise into high terraced slopes and isolated hills, and are traversed by many picturesque valleys and ravines. In old times this great range of heights, densely wooded and haunted by wild beasts, made an inseparable barrier between the people living on either side of it. Some of the more prominent heights along the ridge are

the Peak [1981 feet] in Derbyshire, Ingleborough [2373], Penyghent [2273], Whernside [2414], and Mickle Fell [2591] in Yorkshire, and Crossfell [2930] in Cumberland.

From the high moorlands of the Pennine Chain, in the north-west of Yorkshire, a spur strikes westward into Westmoreland, where it swells out into the picturesque group of hills forming what is called the "Lake District." The materials of which these hills are formed consist mostly of igneous rocks like those of North Wales, and hence their rugged forms resemble those of the Welsh mountains. Some of the chief summits are Great Gable [2940 feet], Helvellyn [3188], Skiddaw [3054], and Scafell [3208].

At least two-thirds of the area of England are rolling lowlands and plains, varying in height from the sea-level up to 500 feet. There are, however, three chief plains. 1. The **Eastern Plain**, lying between the Pennine Chain and the North Sea, and stretching southward to the basin of the Thames. From the mouth of the Tees to Flamborough Head this plain is shut off from the coast by the high grounds of eastern Yorkshire, which form a kind of island of upland country. A continuous plain or valley runs from the Tees through the Vale of York to the Humber. The Yorkshire heights are continued southwards into Lincolnshire, so that a long strip of the plain is cut off by them from Flamborough Head to the Wash. Round the western and southern sides of the Wash the ground sinks into a wide flat, hardly raised above the sea-level. This district, the most low-lying in England, still called the Fens, was in ancient times a tract of bog, morass, and lake. It has now been mostly drained

and turned into arable land. The southern part of the eastern plain in the counties of Norfolk and Suffolk is rolling ground, which gradually subsides into the wide clay-flats of Essex.

2. The **Midland Plain** stretches across the centre of the country between the southern end of the Pennine Chain, and the northern front of the Oolitic escarpment, through the counties of Leicester, Derby, Stafford, and Warwick. It is the highest of the three plains, most of its surface ranging between 250 and 500 feet. It is interspersed with a few detached groups of hills, where masses of the older and harder rocks project above the surface of the soft sandstones and marls of the more level ground, as in the hills of Charnwood Forest, Cannock Chase, Atherstone, and Dudley.

3. The **Western Plain**, which is the smallest of the three, extends from the base of the Westmoreland Hills, along the western base of the Pennine Chain, till it widens out southward and joins the Midland Plain in the south of Cheshire.

Other plains of minor extent are—the Plain of Carlisle, stretching from the Solway Firth up the valley of the Eden, between the hills of Cumberland and the western front of Crossfell; the Plain of the Severn, stretching from the Midland Plain down the basin of the Severn to the Bristol Channel; the Hampshire Plain, extending from the sea up to the base of the chalk hills of Dorset, Hampshire, and Sussex; the Plain of the Weald, lying between the North and South Downs.

Coast-line.—The same rule that guides the development of the general surface-features of the land, namely, that hard materials give rise to pro-

minences and soft materials to valleys and plains, holds good also in the outline of the sea-margin of the land. In general, we may take for granted that where the map shows a promontory jutting out into the sea, the rock of which it consists has been able in some measure to withstand the force of the breakers that are continually dashing against it. On the other hand, where the coast-line retires into an inlet or bay we may infer that the land is there made of materials which have been more easily worn away. But another consideration must be remembered. If the country were to sink down for several hundred feet, so that the lower grounds should be all submerged, the sea would flow up the bottoms of the valleys where rivers now roll. These valleys would become creeks and inlets of the sea. Now we have already seen (p. 5) that probably the area of the British Isles, once connected with the mainland, has been cut off by the subsidence of the intervening lower grounds beneath the sea-level, and hence we may reasonably infer that those inlets of the coast at the head of which streams enter are in many instances submerged land-valleys, which bear witness to the great geographical change that made Britain an island.

The east coast is the least indented, doubtless partly because of the greater uniformity of its rocks. Its bolder cliffs and headlands show the relative durability of their materials, while the bays and indentations point generally to weaker parts of the land which have been more worn away. Where some especially hard rock crops out among others of a softer kind, it makes a promontory or a group of islands, as happens, for example, at the Farn Islands and the castle-crowned cliff of Bamborough, where

masses of enduring igneous rocks occur among the less permanent sandstones and limestones. The magnesian limestone south of the Tyne makes a range of picturesque cliffs with caverns and solitary stacks. The high moors of Yorkshire end off along the sea in a range of noble precipices more than 600 feet in height, and the chalk wolds terminate seawards in the beetling promontory of Flamborough Head [160 feet], which in Saxon times, as its name tells, blazed with a beacon fire, while it now supports a lighthouse.

The softer rocks along the east coast have in some places undergone great waste by the sea within the times of history. The loss has been particularly great between Flamborough Head and the mouth of the Humber—whole parishes with their villages and farms having disappeared. In some places the material so removed is cast ashore again, so that there is a partial gain of land, as happens along the Lincolnshire coast and the flat shores of the Wash. The low indented coasts of Suffolk and Essex abound in creeks which were frequented in old times by the Norsemen and Danes, who left their record in such names as Norwich and Ipswich.

Of the three great inlets on the eastern coast of England, the Humber is an important water-way for commerce, chiefly to the ports of Hull and Great Grimsby. The Wash is too shallow and its shores are too low to admit of extensive navigation, though small vessels ascend the rivers that pour their waters into it. The Thames possesses the most important estuary in Britain. From the Nore, as the floating lighthouse at the mouth of the Thames is called, the river is navigable for merchant vessels and steamers

up to London Docks, a distance of 47 miles. At all hours of the day and night, and at all seasons of the year, ships and barges may be seen passing up and down this great water-way, bringing the produce of every land to the great emporium of London, and carrying the exports which are sent thence to all parts of the world. From the mouth of the Thames the coast runs eastward to the promontory of the North Foreland, where the white chalk of the North Downs appears, and whence it extends to Folkstone, in the range of precipices [350 feet] which are often spoken of as "the White Cliffs of England," since they are the first and last English land seen by those who approach or leave England by sailing through the Strait of Dover and the English Channel. Off the coast lie the dangerous shoals known as the Goodwin Sands, the position of which is marked by buoys and light-ships. Between them and the shore is a deeper channel called the Downs, which serves as a great anchorage for vessels in stormy weather.

The south coast is more varied in outline, chiefly, no doubt, because it presents to the sea a greater variety of rocks. Beginning at the east end and leaving the chalk cliffs of Dover behind, we notice a part of the shore projecting into the promontory of Dunge Ness. This is an interesting exception to the general rule that promontories are made of hard rock. It consists of a low flat of shingle, and has been formed by the tides which here meet and cast up the gravel and sand that have been swept off the beach to the east and west. There has consequently been a considerable gain of land here since Roman times. Beachy Head is a bare cliff of chalk [564 feet], where the end of the South Downs is cut off

by the sea. West of it the shores are low, and fringed with beaches of shingle.

The southern shores of England are especially remarkable for the number and size of their natural harbours. These great inlets, so capacious, so safe, and so defensible, have doubtless been one of the influences which have combined to develop the British navy. Inside of the Isle of Wight, which fronts the coast of Hampshire like a huge breakwater, lies the channel of Spithead and the Solent, with the large harbours of Southampton and Portsmouth opening into it. This place is the main arsenal and anchorage of the fleet, while from Southampton steamers sail to every quarter of the globe. St. Alban's Head and Portland Bill are two rocky headlands formed by the projection of some of the harder Oolitic limestones. To the west of Portland Bill the coast makes a great bay, the western horn of which runs out into the headlands of Torquay and Brixham. This deep indentation coincides with the position of a series of much softer rocks, which are more rapidly eaten away by the sea. From the cliffs of blue clay at Lyme Regis and of red marl at Axmouth and Sidmouth fresh slices are continually slipping down to the beach, where they are speedily broken up and washed away by the waves.

The grouping of granites and different hard crystalline rocks with sandstones and other less resisting materials, imparts to the surface of Devon and Cornwall a much more uneven aspect than that of the country lying to the eastward, and has also given rise to a much more indented coast-line. Numerous inlets, some of which form noble natural harbours, run far inland, while knobs of hard rock protrude

boldly as headlands into the sea. The channel of the Dart has been called "The English Rhine," while the harbours of Plymouth and Falmouth are each large enough to hold a whole navy. The Lizard Head, the most southerly promontory of the British Isles, is a fine sea-precipice rising 186 feet above the waves that chafe its base. The Land's End is a rugged mass of granite [60 feet high] projecting farther westward into the Atlantic than any other part of England. The wave-beaten Scilly Islands, lying to the south-west of the Land's End, consist of the same kind of rocks, and show the same type of scenery as in Cornwall.

The west coast is by much the most irregular side of the country; but all through this irregularity we can still clearly trace the influence of the nature of the rocks in determining the position of the promontories and bays. The long peninsula of Cornwall and Devon, with its abundant bold rocky headlands and sheltered creeks, consists, as we have seen, in large part of hard durable rocks. To the north of it, the wide opening of the Bristol Channel narrows eastward into the estuary of the Severn, fringed with low shores of clay, marl, and mud. On the north side of the Bristol Channel, the southern coast of Wales presents the three important bays of Swansea, Caermarthen, and Milford Haven, with the limestone promontories of the Worm's Head and St. Gowan's Head. The western coast of Wales is chiefly formed by the long, little-broken curve of Cardigan Bay; but at either end of this wide indentation hard ancient volcanic rocks occur and project in the headlands of St. David's on the south, and of Caernarvonshire on the north. Massive slates and schists like-

wise form the farther cliffs of Anglesey. This island is separated from the mainland by a channel called the Menai Strait, in some places little more than a quarter of a mile broad, through which the tides run rapidly and rise in spring tides to a height of 21, and sometimes even of 30 feet. The Strait is crossed by the Britannia Tubular Bridge, made of two lines of iron tubes, each 1513 feet long, which carry the railway to Holyhead in connection with the steamboats to Ireland.

To the east of Anglesey, the coast-line of Wales turns abruptly eastward, and though it projects northwards in occasional cliffs like those of the limestone headlands of Great and Little Orme's Head, it soon sinks down into the great plain that stretches northwards to the far recesses of Morecambe Bay. This western plain is indented by the three important estuaries of the Dee, the Mersey, and the Ribble. Beyond Morecambe Bay the Westmoreland and Cumberland hills come down close to the edge of the sea, but leave at their base a narrow selvage of low ground, which widens out beyond the red cliffs of St. Bee's Head, and joins the plain of Carlisle and the Solway.

Drainage System.—The watershed of the country reveals the position of the line of average highest ground or axis. It shows that this axis does not run along the centre of England, but lies much nearer to the west coast. Hence the average slope on the west side towards the Irish Sea and St. George's Channel is much steeper than that on the east side towards the North Sea. It is instructive to trace the watershed on the map, and to mark how much in some places it recedes from the eastern and

approaches the western sea-board. Starting from the desolate moors that stretch into Northumberland from the southern end of the Cheviot Hills, it descends southward to the low pass between the Tyne and the Irthing (500 feet above the sea), and then strikes into the Pennine Chain, but keeps nearer to the western margin of that long upland. It runs over Crossfell at a height of more than 2500 feet above the sea, and passes between the sources of the Eden and the Swale. Where it sweeps across the moorlands between the basin of the Mersey and that of the Trent, it is 25 miles from the tidal waters of the Mersey and 125 from those of the Wash. Continuing in a somewhat sinuous course, and descending into the Midland Plain at a height of only between 300 and 400 feet above the sea, it keeps to the south of Birmingham, and then turns abruptly eastward, making a great curve to the north-east of Rugby round the head-waters of the Avon. It next strikes south-westward until, on the Cotswold Hills, it approaches within eight miles from the tidal waters of the Severn above Gloucester, but nearly 90 miles from London. It then bends south-westward between the basins of the Avon of Bristol and the Avon of Salisbury, and continues in a winding course through the peninsula of Devon and Cornwall to the Land's End.

It will be observed that the watershed is not always high ground. In the north it in some places runs over the summits of ridges more than 2500 feet high, but sinks down in the central plain to only about 350 feet. All the passes across the country, such, for instance, as that followed by the railway between Settle and Carlisle, or those through which

the different railways run from Manchester to the great manufacturing towns of Yorkshire, are depressions in the line of the watershed.

The rivers of England and Wales may be conveniently grouped in three divisions, according as they fall into the North Sea, English Channel, or Irish Sea and St. George's Channel. Since the watershed lies so much nearer the western than the eastern coast, it is obvious that the streams which flow eastwards must be much larger than those which flow westwards. If the rainfall were distributed equally over the whole surface of the country, the quantity of water carried by the rivers into the North Sea would far exceed that borne by the western streams. But so much more rain falls on the western side of the country that the proportion of water discharged into the North Sea is less than the much larger area drained by the eastern rivers would lead us to expect. In the following enumeration the area of the basin drained by each river is given in square statute miles, and the length in linear statute miles immediately after the name.

1. **Eastern Rivers.**—The Tyne [area 1130, length 73] rises in two streams, one (North Tyne) from the southern end of the Cheviots, the other (South Tyne) from the northern slopes of Crossfell, which unite above Hexham and flow eastward across the great coal-field of Northumberland to Tynemouth and Shields. It is navigable for some distance above Newcastle. The portion between Newcastle and the sea forms one of the most important shipping channels on the east coast of Britain. The Wear [area 456, length 65] is chiefly of importance for the busy seaport of Sunderland at its mouth. It is navigable

for small vessels up to Durham. The Tees [area 708, length 79] rises not far from the sources of the South Tyne, flows through the Pennine Chain in the picturesque valley of Teesdale, crosses the eastern plain and enters the sea below Stockton and close to the high grounds of Cleveland. The name Ouse has already (p. 23) been referred to as a corruption of a Celtic word for water or river. There are several Ouses in the country, each being "the river" of the district in which the Celtic people lived who gave it its name. The Yorkshire Ouse is formed by the union of a number of tributaries (Swale, Ure, Wharfe, Aire, Calder) from the eastern side of the Pennine Chain, and one (Derwent) from the western side of the Yorkshire Wolds. Some of these streams are noted for the picturesque valleys through which they flow in the higher parts of their course. From where the Ouse falls into the Humber to the head of Wharfedale is 105 miles, and the area of the basin of the river, including all its tributaries, is 4290 square miles. The Trent [area 4052, length 147], rising in the southern end of the Pennine Chain, not far from Congleton, flows southward through the Staffordshire coal-field, descends into the Midland Plain, and then bending northward winds through the Eastern Plain to fall into the Humber. It is navigable for barges as far up as the great brewing town of Burton-on-Trent [117 miles]. The broad estuary known as the Humber thus receives a far larger discharge of water than any other inlet on the eastern coast. If all the streams that fall into it are regarded as forming one great basin of drainage, this basin covers an area of upwards of 9000 square miles. In the depression of the Wash a number of

smaller streams carry down the drainage of the low Eastern Plain—the Witham [area 1079, length 80], Welland [area 760, length 70], Nen [area 1077, length 70], and Great Ouse [area 2607, length 156]. The last-named river rises near the edge of the Oolitic escarpment to the north of the town of Buckingham, and, after flowing down the gentle south-eastward slope of that ridge to near the foot of the chalk hills, turns northward into the low flat Fen country. It is navigable inland as far as Bedford. The undulating plain of Norfolk and Suffolk is drained by many small streams, of which the largest is the Yare [area 880, length 48], which enters the sea at Yarmouth. The Thames [area 4613, length 154] rising near the crest of the Cottswold Hills, within nine miles from the tidal part of the Severn, flows first down the eastern slope of the Oolitic escarpment, and then eastwards across the plains that lie between that ridge and the chalk downs. It breaks through these downs at Wallingford, and flows eastward through the broad plain between the North Downs on the south side and the chalk hills of Buckingham and Hertfordshire on the north. It is navigable by barges for 124 miles (but 250 miles measured by the windings), up as far as Lechlade, where its height is only 243 feet above the sea, and whence a canal connects it with the Severn.

2. The **Western Rivers**, though numerous, are for the most part short in length and small in volume. There are only five that need to be enumerated here. Beginning at the north we have the Eden [area 915, length 65], which rising in one of the loftier parts of the Pennine Chain, flows northward in a well-

defined valley between the base of the Crossfell heights and the hills of the Lake District, entering the Solway below Carlisle. The Ribble [area 585, length 54] rises high on the western flanks of the Pennine Chain, flows southward to Settle, in a valley which is followed by the Settle and Carlisle Railway, and then turning to the south-west enters the sea at Preston. The Mersey [area 885, length 56] likewise drains a part of the south-western extension of the Pennine Chain, and, crossing the southern end of the great Lancashire coal-field, enters the sea by a broad estuary [20 miles long]. Another wide inlet lying immediately to the south-west of that estuary, and only separated from it by a low narrow strip of flat ground, is that into which the Dee [area 813, length 77] pours its waters. This stream, flowing out of Bala Lake, which lies amid one of the hill-groups of North Wales, winds among green valleys till it enters upon the wide Western Plain, on which it turns northward to its estuary [13 miles long]. The Severn [area 4350, length 180] rises on the sides of Plinlimmon Mountain, and flows north-eastward until it leaves the hilly country. It then turns eastward along the margin of the great plain, and bending southward flows in a wide vale down to its estuary at the head of the Bristol Channel. It can be navigated up even as far as Welshpool, and steamers ascend to Gloucester. On the north side of the estuary of the Severn are the Wye [area 1609, length 135], and the Usk [area 540, length 57], and on the south side the Lower Avon [area 891, length 75], which is navigable by large vessels up to Bristol. The Upper Avon [96 miles long] joins the Severn at Tewkesbury. The streams which

drain the west side of Wales are short and rapid owing to the steepness of the ground. Those which descend from the northern side of Somerset, Devon, and Cornwall into the Bristol Channel are likewise unimportant.

3. The **Southern Rivers**, which drain into the English Channel, are all short and have small drainage basins. On the west side, the Tamar [area 385, length 45] is chiefly important because it forms the inland continuation of the great harbour (or Sound) of Plymouth. The Exe [area 584, length 55] is remarkable for rising in Exmoor within about five miles of the Bristol Channel, and flowing completely across the peninsula to the head of its estuary at Exeter. The Salisbury Avon [area 673, length 48] rises from the southern side of the Marlborough Downs, flows across Salisbury Plain and the west part of the great Hampshire plain to the sea at Christchurch. To the east of the Isle of Wight the streams are hardly large enough to deserve the name of rivers.

The greater part of England is destitute of natural lakes. In the flats of the Fen country there were once numerous and extensive sheets of shallow water, most of which have been drained, though their sites still retain the old names, as Whittlesea Mere, near Peterborough. The only other lowland tract wherein lakes are frequent is Cheshire. In that district they arise from the solution of the underground rock-salt which is pumped to the surface as brine. In consequence of this operation, the ground above the salt gradually sinks, and intercepts the surface drainage, which, gathering in the hollows, forms little *meres* or lakes. It is among the higher hills

that in Britain, as in other parts of the world, lakes are most abundant. The Lake District of Cumberland and Westmoreland is pre-eminently the part of England where lakes are most numerous. It will be seen from the map that a remarkable group of valleys, each with its lake, radiates from the central group of hills. The largest of these sheets of water—Windermere (14 miles long)—strikes southward. Others are Ulleswater, Derwent Water, Bassenthwaite Water, Ennerdale Water, Wast Water, Coniston Water, and numerous smaller tarns. The scenery of this district is the most picturesque in England.

The more hilly tracts of North Wales likewise enclose numerous small tarns called *llyn*s. Bala Lake, from which the Dee issues, is 4 miles long, and is the largest in Wales. In the uplands of South Wales also there are a few little sheets of water, especially among the Black Mountains and the Breconshire Beacons, the most important being Llyn Safaddu or Llangorse Lake.

Mineral Fields.—As so much of the wealth of the country depends on the extent and value of its minerals, and as the areas where these minerals are worked have drawn to them a constantly-increasing proportion of the population, and have been the means of fostering the growth of large towns, it is desirable to know the distribution of the different mineral fields and the nature of their more important minerals. A line drawn from Exmouth to the Wash may be taken to define the southern limits of the mineral tracts. South of that line few workable minerals occur. Coal, the most important mineral, lies in a number of scattered coal-fields from Berwick to Bristol. The largest of these tracts are the North-

umberland and Durham coal-field, extending from Warkworth to near Darlington; the Yorkshire and Derbyshire coal-field, stretching from Leeds to near Derby; the Lancashire coal-field, lying between the valleys of the Ribble and Mersey; the North Staffordshire coal-field, with Stoke-on-Trent; the South Staffordshire coal-field, with Wolverhampton; the Bristol coal-field; and the South Wales coal-field, stretching all the way from Pontypool to St. Bride's Bay. The total value of the coal raised in 1886 was nearly £34,000,000.

It will be observed how densely populated most of these coal-fields are. Since the introduction of steam machinery and the establishment of large manufactories where the motive power is steam, it has been cheaper and more convenient to erect the various kinds of mills and works as near as possible to the source of supply of the fuel. Hence, as already stated, the various larger manufacturing industries have naturally fixed themselves in centres where cheap fuel can be obtained, and the population that lives by these industries has been drawn thither from the agricultural districts. A remarkable transference of the inhabitants of the country has accordingly taken place during the last half century. This change is more especially to be noticed in the Lancashire, Derbyshire, and Northumberland coal-fields.

Iron ore is extensively worked in some of the coal-fields, where it lies in layers or nodules of what is known as the argillaceous carbonate of iron among the rocks in which the coal occurs, particularly in Staffordshire and Yorkshire, and to a less extent in Wales. Thick beds of it are also worked at the edge of the Oolitic escarpment in the Cleveland district

south of the mouth of the Tees. Brown iron ore is largely mined among the Oolitic rocks of Lincolnshire and Northamptonshire, while red iron ore or hæmatite is found abundantly in the limestone belt that lies between the hills of the Lake District and the sea. The total value of the iron ore raised in 1886 was nearly £3,000,000. Lead and zinc are obtained in Cumberland, Westmoreland, Durham, Yorkshire, Shropshire, Wales, and the Isle of Man. The value of lead ore raised in 1886 was £426,374, and of zinc ore £63,759. Tin is only obtained in Devon and Cornwall; in 1886 the value of the ore raised to the surface was £780,302. Copper ore is chiefly found in the same two counties, particularly Cornwall. £65,000 worth of it was obtained in 1886; but so much copper is now found in other countries that the Cornish mines have been in large part abandoned. Thick beds of rock-salt occur chiefly in Cheshire, Worcestershire, and Durham. The salt is mostly obtained by pumping up the brine, that is, water saturated with salt. The value of the salt raised in 1886 was £729,527. Fire-clay is obtained in the coal-fields and china-clay in the granite districts of Devon and Cornwall. Slates are almost wholly taken from North Wales. Building stones are found in most parts of the country, particularly in the coal-fields, limestone districts, and hilly ground; but they are hardly to be got in the areas of fen, clay, marl, and chalk.

Population and Political Subdivisions.—The population of England at the last census (1881) amounted to 24,613,926, consisting of 11,961,842 males and 12,652,084 females. If these inhabitants were equally distributed over the whole country

there would be 484 persons on every square mile of the ground—a density of population greater than that of any European country except Belgium. As already mentioned, the people of England are essentially Teutonic, having descended from the Angles, Saxons, Jutes, and Danes, who drove out the earlier Britons. But there has been a great commingling of races in the population (p. 21).

England is divided into forty shires or counties. A shire (literally a portion of land *shorn* from the rest for the purposes of government) is a separate district having its own local officers for the management of its affairs. In old times it was under the supervision of a shire-reeve or sheriff. The various shires have been separated at widely different times. Some of them represent the areas of old Saxon kingdoms, others those of ancient tribes. Many of them were formed around central fortresses or towns, each of which gave its name to the surrounding shire. In the following enumeration the area in square miles and the population at the census of 1881 are given in brackets after the name of each county.

NORTHUMBERLAND, “the land north of the Humber” [area 2016, pop. 434,086], consists of an inner hilly and moorland district ranging from the Cheviot Hills along the eastern half of the Pennine Chain, and a lower arable tract bordering the sea and containing the coal-field. The uplands, chiefly devoted to rearing sheep and cattle, contain valuable lead-mines. On the Tyne are situated the principal towns—Newcastle-on-Tyne, North Shields, Tynemouth, Hexham. This river from Newcastle to the sea is one of the busiest centres in the country, the manufactures of

iron, machinery, cannon, earthenware, glass, soda, and chemicals being especially noteworthy. Alnwick and Morpeth are two picturesque old towns on the line of railway to Scotland. Berwick-on-Tweed, with a small area of land ("liberties") around it on the north side of the Tweed, stands geographically in Scotland, but for centuries until quite recently formed an independent county belonging neither to England nor Scotland. It is now attached to Northumberland. The old walls, which were built round it during the wars between England and Scotland, are still in great part entire.

DURHAM [area 1011, pop. 867,258] ranges westward into wild moorlands, while eastwards it falls into a great arable plain stretching from the Tyne to the Tees. Its county town, Durham, with a famous cathedral and castle, overlooks the valley of the Wear. At the mouth of this river is the busy seaport of Sunderland. Gateshead and South Shields stand at the northern margin of the county, Darlington, Hartlepool, and Stockton-on-Tees at its southern end. The large coal-field of the eastern half of the county furnishes the chief industry; there are manufactures of iron, glass, soda, sail-cloth, and at the sea-ports shipbuilding.

CUMBERLAND, "the land of the Cymry or Britons" [area 1515, pop. 250,647], is nearly all high pastoral ground, including some of the loftiest hills and most picturesque scenery in England (p. 34). The vale of the Eden is a broad fertile plain between the western hills and the edge of the Pennine Chain; there is also a tract of lowland between the Solway and the hills. The chief town, Carlisle, with a cathedral and castle, was a notable place in the time of the border

wars and forays. To the south is the market-town of Penrith. On the coast, Whitehaven is the great port of export for the coal-field which here lies between the base of the hills and the sea.

WESTMORELAND [area 782, pop. 64,191] is entirely hilly, except the narrow strip of lowland which skirts the seaward base of the hills, and the flat bottoms of the valleys. It is essentially a pastoral district, though veins of lead give employment to a small mining population. The county town, Appleby, stands far up the vale of the Eden; Kendal (or Kirkby Kendal) on the Kent, one of the oldest weaving towns in England, was famous in former days for its cloth, called "Kendal green," and is still a centre of woollen manufactures.

LANCASHIRE [area 1887, pop. 3,454,441], so named from its county town Lancaster, stretches northward into the group of the Lake District hills and the high uplands of the Pennine Chain, but embraces a wide expanse of lowland between the base of the high grounds and the sea. The uplands as usual are chiefly devoted to pasture, while the lower grounds are cultivated. But the main feature of the Lancashire plain is the great coal-field between the Ribble and the Mersey, on which so many busy centres of population have been established. The largest and wealthiest town, Liverpool, ranks next to London among the towns of England, with a population of more than half a million. Situated on the estuary of the Mersey, it is one of the great seaports of Britain. Manchester, with its suburb Salford, is noted for its factories, especially its cotton-mills; other manufacturing towns are Rochdale, Burnley, Oldham, Blackburn, Bolton, Wigan, and Preston.

Lancaster (Luncaster, the camp on the Lune, Ad Alaunam of the Romans), once the chief centre of the county, but now a place of comparatively little importance, shows how the development of the industries of the country has changed the distribution of the population. On the west side of Morecambe Bay, a tract of Lancashire which really belongs geographically to the Lake District, was originally a quiet agricultural tract, but has in recent years become busy and populous from the discovery of iron ore in it. Where its large town, Barrow-in-Furness, now stands, there were only a few huts in 1846.

CHESHIRE [area 1026, pop. 644,037], named from the old Roman town Chester which formed its centre, lies almost wholly on a great plain that stretches north and south into the adjacent counties, and is bounded on the west by the Welsh hills, on the east by the southern extremity of the Pennine Chain. Its excellent pasture has made this plain long famous for butter and cheese. A portion of the Lancashire coal-field extends into the north of the county, and large deposits of salt underlie the southern part. Staleybridge and Stockport are manufacturing towns like those of Lancashire. Runcorn has great iron-works. Birkenhead, a suburb of Liverpool, is noted for shipbuilding. In the salt district, the names of the towns include the word *wich* or *wick*, meaning a brine pit (which is the same as the word "vig" or "wic," a bay, already referred to, p. 24), as Nantwich, Middlewich, Northwich. Crewe is a great railway junction. Macclesfield is the chief seat of the silk manufacture. Chester, with its cathedral, castle, and walls, and wonderfully picturesque streets, retains more of its antique character than most other English towns.

Traces of its Roman buildings are still to be seen.

YORKSHIRE [area 6067, pop. 2,886,564], the largest and on the whole the most diversified county in England, may be regarded as including three distinct tracts of ground differing greatly from each other in their character. To the east lies the high upland pastoral country of the Moors and Wolds. In the centre, the wide Vale of York runs as a richly agricultural tract from the Tees to the Humber, and sends off the tributary Vale of Pickering which separates the Moors on the north from the Wolds on the south. To the westward, the ground rises into the high pastoral ridge of the Pennine Chain, broken into innumerable valleys with picturesque ravines and waterfalls. The south-eastern portion of this western tract is occupied by the great coal-field, and is the site of the chief industries. Yorkshire is divided into three "Ridings" (from the Scandinavian *thriding*, a third part), which in some respects serve as separate counties. Their limits do not correspond with any natural boundaries. The North Riding embraces the part of the country north of a line drawn from the borders of Westmoreland by the city of York to the sea a little south of Scarborough. Its eastern and western hilly tracts are good grazing ground, while the intermediate low country is arable. It contains Northallerton and Thirsk, on the main line of railway to Scotland; Scarborough and Whitby, watering-places on the coast; Middlesborough on the Tees, the centre of the Cleveland iron and salt district. The West Riding, the largest and most important of the three, includes the western and southern parts of the county as far east

as the line of the Derwent and Trent, with the coal-field and almost all the large towns. Leeds, Bradford, Halifax, Huddersfield, and Wakefield, besides their collieries, have large numbers of mills, and form the great centre of the English woollen manufacture. Barnsley is noted for its linen-mills, Sheffield for its cutlery. Ripon, a market-town and the seat of a bishopric, lies in an agricultural district. York, the chief town of the county, at the junction of the three Ridings, was the capital (Eboracum) of Roman Britain, and is the seat of an archbishopric. The East Riding includes the bare pastoral Wolds and the low grounds that slope from them to the Humber. It has a few little quiet market-towns (Beverley, Great Driffield, Market Weighton), and the busy seaport of Hull, which is the outlet for the foreign trade of the county.

DERBYSHIRE [area 1029, pop. 461,914] lies chiefly on the high limestone ground that forms the southern end of the long Pennine ridge. Its eastern part sinks into the great coal-field, and its southern portion descends into the Midland Plain. Its high grounds, formed of limestone (which from its elevated position there came to be known as "Mountain Limestone"), include the picturesque scenery of the Peak with great caverns and underground rivers. The county town, Derby, noted for the manufacture of silk, pottery, and railway carriages, retains a Danish name. The last syllable, so abundant in English topography, has already been alluded to as the Danish *by*, a town, and the first may be *dyr*, a deer or wild beast; so that the name perhaps carries us back to the time when the wooded heights to the north still harboured wild beasts, and the Danish rovers settled on the edge of these wastes.

NOTTINGHAMSHIRE [area 824, pop. 391,815] is a strip of country lying along the great plain watered by the Trent, chiefly agricultural, but in the western tracts retaining in Sherwood Forest a remnant of the ancient woodlands of the country. The county town, Nottingham, is the centre of the lace-making of England, and also manufactures cotton, hosiery, silk goods, and shoes.

LINCOLNSHIRE [area 2762, pop. 469,919] consists of three districts: Lindsey, which, as its name denotes (Scandinavian *ö* or *ey*, island), is an island-like tract rising from the plain of the Trent into the long ridge of the Lincolnshire Wolds, formed of bare chalk hills, like those of Yorkshire; Kesteven in the south-west, traversed from north to south by the low ridge of the Oolitic escarpment; and Holland in the south-east, including the fenland. The county town, Lincoln, once a Roman colony (Lindum Colonia, corrupted into Lincoln), has a fine cathedral, placed on the edge of the Oolitic ridge and commanding a wide view over the plains of the Trent. Other towns are Boston, a little port at the mouth of the Witham River; Grantham, an important station on the Great Northern Railway; Great Grimsby, a growing seaport at the entrance of the Humber.

SHROPSHIRE or SALOP [area 1319, pop. 248,014], so named by the Saxons from the scrob or scrub of low copsewood that overspread the ground when they conquered it, consists of two distinct forms of surface, which are divided from each other by the course of the Severn. To the south-west of that river is an undulating hilly region which merges westwards into Wales; to the north-east is a wide lowland that forms part of the great Midland Plain.

Shrewsbury (Saxon, Scrobbes-byrig or Scrub-borough, corrupted by the Normans into Sloppesbury, whence the modern name Salop), the county town, stands on the Severn, not far from a portion of the coal-field. The chief coal and iron districts include the towns of Wellington (near the Wrekin, 1320 feet high, one of the most conspicuous hills in the west of England), Ironbridge, Coalbrookdale, and Broseley, the last-named place being famous for its manufacture of tiles and tobacco pipes.

STAFFORDSHIRE [area 1169, pop. 981,013], so named from its chief town, is an agricultural, mining, and manufacturing county, and consists of three portions, of which the northern runs up into the southern spurs of the Pennine ridge, and contains a coal-field. The central tract lies on the Midland Plain, and is mainly agricultural, while the southern embraces the bleak moors of Cannock Chase, and the coal-field of South Staffordshire. The county town, Stafford, has a large trade in the making of leather and shoes. Wolverhampton is noted for its iron-works; Burton-on-Trent for its breweries. In the north is the famous district of "the Potteries," the centre of the English earthenware manufacture, with the towns of Stoke-on-Trent, Burslem, and Hanley. Lichfield, a cathedral town, lies in an agricultural district.

LEICESTERSHIRE [area 799, pop. 321,258], named from its chief town, lies on the Midland Plain, but includes one of the more prominent rising grounds on that plain—the ridge of Charnwood Forest. It is an agricultural district, but contains the small coal-field of Ashby-de-la-Zouch. Leicester, once, as its name records, a fortified Roman town at the

junction of two of the great highways across the country, stands on the river Soar, and is a great centre for woollen manufactures, boots and shoes. Loughborough makes woollen and cotton hosiery, and Melton Mowbray is noted for the pork pies which it supplies to all parts of the country. The county is celebrated for its breeds of cattle and long-wooled sheep.

RUTLANDSHIRE [area 148, pop. 21,434], the smallest of the English counties, lies partly on the gentle ridge of the Oolitic escarpment, partly on the plain below it, and is wholly agricultural.

HEREFORDSHIRE [area 833, pop. 121,062], named from its central town, lies on the undulating country that slopes from the Welsh high grounds into the plain of the Severn, and is traversed by the important valley of the Wye. Its south-western borders rise into the elevated moorland of the Black Mountain. The rocks underlying nearly the whole of the country are red sandstone and marl, giving rise to rich red soil, famous for its apple orchards. The breeds of cattle and sheep are also celebrated. Hereford on the Wye is a cathedral town.

WORCESTERSHIRE [area 738, pop. 380,283], which takes its name from the old Roman town round which it was formed, lies in the great plain of the Severn, but rises along its western border into the ridges of the Malvern and Abberley Hills, and in the south-east includes a small part of the high Oolitic escarpment. It is mainly agricultural, being especially noted for its orchards and hop-gardens. It also, at its northern end, has deposits of coal and salt. Worcester, the seat of a bishopric, is noted for porcelain and gloves; Droitwich for salt; Dudley for

coal; Stourbridge for glass and pottery; Kidderminster for carpets; Malvern for mineral wells.

WARWICKSHIRE [area 884, pop. 737,339], called after its county town, lies in the very heart of the plain of the Midlands, and is traversed by the Avon River. It is chiefly an agricultural county, but contains also a small coal-field stretching between Tamworth and Nuneaton. Warwick, the county town, has a magnificent feudal castle still in excellent preservation. The most important town, however, is Birmingham, the great manufacturing centre of the Midlands, and celebrated for its wares of iron and steel. Other towns are Coventry, noted for its silks; Rugby for its school; Leamington for its mineral springs; and Stratford-on-Avon for being the birthplace of Shakespeare.

NORTHAMPTONSHIRE [area 984, pop. 272,555], lying along the broken edge of the Oolitic escarpment, is an undulating county with a fertile soil, forming rich pasture and corn land, and supporting abundant and well-grown trees. The county town, Northampton, is noted for making boots and shoes. Peterborough, with a fine cathedral, is the seat of a bishopric.

HUNTINGDONSHIRE [area 358, pop. 59,491] is a low, gently-undulating, agricultural plain, which sinks northward into the flats of the fenland. Huntingdon, the county town, was the birthplace of Oliver Cromwell. Other towns are St. Ives and St. Neot's on the Ouse.

CAMBRIDGESHIRE [area 820, pop. 185,594] comes mostly within the area of the fenlands, and is therefore a flat, fenny, and marshy district, except towards the south, where it is crossed by the chalk

escarpment, the highest part of which is known as the Gog Magog Hills. The county town, Cambridge on the Cam, is famous for its university. Ely, the site of a cathedral and seat of a bishopric, is built on a slight rising ground in the fens, which in old times rose as an island amid the waters.

NORFOLK [area 2118, pop. 444,749]—"the country of the north folk" or Northern Angles, after whom the counties of Norfolk and Suffolk are still called East Anglia—is a gently-undulating district lying upon chalk which, however, is in great part covered with gravel, sand, and clay. In the eastern part of the county numerous sheets of water locally known as "broads" are haunted by crowds of wild-fowl. The county town, Norwich ("north creek") has a fine cathedral, and is noted for its manufactures of mustard, silk, wool, and cotton. Yarmouth is one of the chief ports for the herring-fisheries of the North Sea. Cromer is a favourite watering-place.

SUFFOLK [area 1475, pop. 356,893]—"the country of the south folk" or Southern Angles—is an agricultural district, the western part rising into bare chalk uplands, and the eastern part sinking into a low plain, into which the sea sends a number of long inlets. Ipswich, the county town, stands at the head of one of these navigable inlets, that of the Orwell. Other little towns are Bury St. Edmunds, Sudbury, and Eye in the interior; and Lowestoft, a small sea-port, on the coast. Much of the coast-line has been eaten away by the sea within historic times.

MONMOUTHSHIRE [area 578, pop. 211,267], named from its chief town, which stands at the "mouth of

the Monnow," is geographically a part of Wales, and was not made an English county until the time of Henry VIII. The Welsh language is still in common use among the inhabitants. The western part of the county rises into the high uplands of the South Welsh coal-field, and abounds in coal and iron-stone. The eastern district slopes down the valleys of the Usk and Wye into the estuary of the Severn. The county town, Monmouth, is reached from the sea by the navigable channel of the Wye; but the chief trade is in the mining district, where the centres are Tredegar and Pontypool, with the harbour of Newport at the mouth of the Usk.

GLoucestershire [area 1224, pop. 572,433]—named after its chief town, which was a Roman station (Glaevum) and was known to the early English settlers as Gleawan Ceaster, now corrupted into Gloucester—consists of three distinct portions. In the centre lies the wide fertile plain of the Severn; on the east the Oolitic escarpment rises abruptly from this plain into the range of the Cotswold Hills; on the west beyond the Severn comes the ancient woodland of the Forest of Dean. Most of the county is agricultural, but the portion lying west of the Severn contains the valuable coal-field of the Forest of Dean, and the southern part includes the Bristol coal-field. The county town, Gloucester, which has been a place of importance ever since Roman times, is reached by vessels of 500 tons by the Berkley Ship Canal. It has a fine cathedral. More important, however, is Bristol, the seventh city in England in respect to population, standing on the Avon, and reachable by large ships. It is noted for its manufactures of glass, sugar, tobacco,

and other commodities, and is a great trading port with Ireland, the Black Sea, West Indies, and South America. Other towns are Cheltenham, a celebrated watering-place; Cirencester, with an agricultural college; and Stroud, the chief seat of the woollen manufactures of the county.

OXFORDSHIRE [area 755, pop. 179,559] is a long strip of country on the north side or left bank of the Thames, having the Chalk downs of the Chiltern Hills in its southern portion, and stretching northwards across the undulating ground of the Oolitic rocks to the plain of Warwickshire. It is essentially an agricultural county. Its chief town, Oxford, is the seat of a bishopric and of a famous university. Other towns are Banbury, long noted for its cheese and cakes; Woodstock, chiefly famous for the royal manor which stood there, and which forms the scene of Scott's story of *Woodstock*.

BUCKINGHAMSHIRE [area 743, pop. 176,323], like the previous county, forms a long strip stretching northwards from the chalk hills, which cover most of its southern portion. At the northern base of the Chalk escarpment lies the rich vale of Aylesbury, celebrated for its pasture and the milk and butter it supplies. The county town is Aylesbury. Eton on the Thames adjoins Windsor, and is famous for its public school. The other towns are chiefly centres of agricultural districts, such as Great Marlow, Buckingham, and High Wycombe.

BEDFORDSHIRE [area 460, pop. 149,473], in its southern and highest part, includes a portion of the line of the Chalk escarpment of the Chiltern Hills, whence the ground descends northward into the valley of the Ouse. It is essentially agricultural,

but has also manufactures of straw-plait. Bedford, the county town, where John Bunyan wrote his *Pilgrim's Progress*, has an excellent grammar school. Dunstable, Luton, and Leighton Buzzard are centres of straw-plait manufacture.

HERTFORDSHIRE [area 633, pop. 203,069] lies mainly on the chalk, and its highest ground rises along the northern border about the edge of the Chalk escarpment, whence the land slopes gently southward, but with numerous undulations. It is an agricultural district, but carries on manufactures of paper and straw-plait. The county town, Hertford, has the remains of an ancient castle, formerly a place of importance. St. Albans is famous for its abbey, recently restored and used as a cathedral. Hitchin, on the Great Northern Railway, grows lavender and makes straw-plait.

WILTSHIRE [area 1354, pop. 258,965] lies chiefly on the chalk, which forms the wide upland of Salisbury Plain, and rises in the north into the range of the Marlborough Downs. It is mainly agricultural, and is especially noted for its bacon. Its chief town, Salisbury, has a noble cathedral, and at a short distance to the north is the celebrated circle of standing stones called Stonehenge. Among the other towns are Wilton, with carpet factories; Marlborough, with a public school; Devizes, Bradford, and Malmesbury.

BERKSHIRE [area 722, pop. 218,363] lies along the southern or right bank of the Thames, and includes a portion of the Chalk escarpment between Swindon and Wallingford. It is an agricultural district. Its county town, Reading, is a noted centre for the manufacture of biscuits. At Windsor stands

the chief castle of the sovereigns of Great Britain, with an extensive sylvan region known as Windsor Forest.

MIDDLESEX [area 283, pop. 2,920,485], "the land of the Middle Saxons," is, next to Rutland, the smallest English county, but as it includes a large part of the city of London, it is one of the most populous. It lies on the north side of the Thames valley. Most of its surface is flat, varied with a few gently-rising grounds, such as Hampstead Heath and Harrow Hill. The soil is chiefly covered with pasture. The county town is the small town of Brentford. But the chief importance of the county is derived from the part of it covered by London. This city, the capital of the British Empire, covers an area of more than 70 square miles in the counties of Middlesex, Surrey, and Kent, and contains a population of upwards of 4,000,000, that is, more than the entire population of Scotland, and one-sixth of the whole population of England and Wales. All kinds of manufactures are carried on in it, some of the most noted being glass, beer, coaches, watches, hats, leather, sugar, and pottery. Its position on the Thames, with a channel navigable from the sea by vessels of 1400 tons, has made it a great centre of exports and imports. More than half of all the customs duties levied in British ports come from the port of London. The metropolis is the meeting-place of the British Parliament, and the seat of the Law Courts of the country, and of all the public departments. Ten miles to the north-west of London is Harrow on the Hill, with a famous public school.

ESSEX [area 1542, pop. 576,434], "the land of the East Saxons," rises along its western border into the

range of chalk hills, but sinks towards the coast into wide muddy flats, hardly raised above the level of the sea, and cut by inlets into peninsulas and islands. It is an agricultural county, and used to raise much wheat, but the importation of cheap corn has caused many of the farms to be thrown into pasture. The county town is Chelmsford; Colchester, a market-town and a river port on the Colne, has oyster fisheries; Harwich is one of the ports from which steamers sail for the Continent; Shoeburyness, at the mouth of the Thames, is the chief artillery station in Britain.

HAMPSHIRE [area 1621, pop. 593,470], along its northern margin has the range of chalk heights which runs eastward into the North Downs; in the centre is the continuation of the wide Plain of Salisbury, from which another range of heights runs away to the south-east to form the South Downs. On the southern side of these hills the ground becomes flat and gently undulating, much indented with inlets of the sea, and includes the New Forest. The chief industry of the county is agriculture. The county town, Winchester, the seat of a bishopric, has a cathedral and a noted public school. Southampton is an important steamboat port with a large foreign trade. Portsmouth is a great naval station for the British fleet, and is defended by numerous forts. On the coast are the little sea-port of Christchurch, and the growing watering-place Bournemouth. Hampshire includes the Isle of Wight (p. 79).

SURREY [area 758, pop. 1,436,899]—the “suth rice” or southern kingdom of the Saxons—has as its distinguishing feature the range of the chalk hills

forming the North Downs, which run in an east and west direction through the centre of the county. To the north of this ridge the ground falls to the Thames, and to the south lies the great plain of the Weald. Leith Hill [967 feet], the highest point in Surrey, commands a fine view of the plains on both sides. It will be observed from the map that the chief streams (Mole and Wey) of this county rise in the plain of the Weald, and flow northwards through gaps in the ridge of chalk. The large population of Surrey arises from the fact that a portion of the northern limits of the county form the southern part of London, on the right bank of the Thames. Beyond this thickly-inhabited district the numerous lines of railway leading from London have brought an increasing population to the surrounding villages and little towns, which are one after another being connected with London by a continuous line of houses along the chief roads. Elsewhere the county is purely agricultural; the low grounds near London are largely covered with market-gardens for the supply of the metropolis. Guildford, the county town, stands at one of the gaps through the chalk downs, and Reigate at another. On the Thames are Richmond with its fine park, and Kingston-on-Thames, with the stone on which tradition says the Saxon kings sat when crowned. In the north-west, near the sandy heath of Bagshot, is the Sandhurst Military College.

SUSSEX [area 1458, pop. 490,505]—"the land of the South Saxons"—is crossed from west to east by the chalk ridge of the South Downs, to the north of which the ground falls into the wide basin of the Weald, while to the south only a narrow strip of

lowland intervenes between the base of the chalk hills and the sea. Where the hard ridge of chalk reaches the sea it projects as the promontory of Beachy Head (p. 38). Most of the streams of the county rise in the district of the Weald, and flow southward through gaps in the chalk ridge. In ancient times the Weald was a vast forest, while the downs were bare uplands as they are still. These broad chalk uplands are largely devoted to the rearing of sheep, and "South Down mutton" is well known in the south of England. The county town, Chichester, was a Roman station, and has a cathedral. From its mild climate and nearness to London, the coast of Sussex is much frequented by visitors, and a number of flourishing watering-places have arisen on it, particularly Brighton, Eastbourne, Worthing, and Littlehampton. Hastings is an ancient and picturesque town, which has grown into a fashionable seaside resort by the building of the modern suburb of St. Leonards.

KENT [area 1555, pop. 977,706] has retained its old Celtic name (*Gwent*, an open clearing) which was no doubt given to it from the wide open range of chalk downs that ran westwards through it, while the country of the Weald to the south was still a dense forest (p. 23). This ridge of chalk, terminating in the broken line of cliffs from Folkstone to the North Foreland, is still the most marked physical feature in the county. It is a prolongation of the North Downs of Surrey. Its streams (Darent, Medway, Stour) rise in the Weald and flow northward into the Thames through gaps in the ridge. Between the northern base of the chalk hills and the Thames, a strip of flat land intervenes which has

been made use of from Roman times as the highway between London and the eastern coast. Kent has been long celebrated for its corn and pasture, and for hops, cherries, plums, and filberts. Its county town, Maidstone, stands on the Medway, as its name (Medway's town) signifies. Canterbury ["Cantwara-byrig," town of the men of Kent] was an important Roman town, and is still the seat of the archbishop who is primate of England. Rochester, also a Roman town on the same line of road to London, still shows its former importance by being the seat of a bishopric. Other old towns which have decayed are the so-called Cinque Ports, or five harbours, which were set apart by William the Conqueror for the defence of the kingdom—Sandwich, Dover, Hythe, Romney, and the Sussex seaport of Hastings. So great have been the changes of the coast-line since Norman times that Sandwich and Hythe are now inland, with a strip of gravel and sand between them and the sea. Dover retains its importance chiefly as a port of steamboat communication with the Continent. Of the modern and more important towns the following may be mentioned: Greenwich with the great observatory, from which as a centre the longitudes of the earth's surface are reckoned; Deptford, with great docks; Woolwich, with the chief military arsenal of Britain; Chatham, with docks and a great naval arsenal; Sheerness, on a detached part of the coast at the mouth of the Thames, with naval dockyards. The north-eastern district of the county ending in the North Foreland, is known as the Isle of Thanet (once an island, but now united with the mainland), and its dry climate attracts many visitors to its watering-places, Rams-

gate, Margate, and Westgate. Folkstone is another important port of communication with the Continent.

SOMERSET [area 1640, pop. 469,109]—the district of the West Saxon tribe of the Somersætas—is marked by a series of parallel ridges which run in a general west-north-west and east-south-east direction, separated by broad and fertile valleys. At the north-eastern end, close to Bristol, is Dundry Hill—a westerly prolongation of the Oolitic escarpment. The Mendip Hills [1067 feet], formed principally of limestone, and presenting picturesque cliffs and caverns, run between Frome and Weston-super-Mare. The Quantock Hills [1270 feet] lie between Bridgewater Bay and Taunton. The Blackdown Hills form the boundary with Devonshire to the south-west of Taunton, while to the north-west the uplands of Brendon Hill strike westward into the high bleak tract of Exmoor Forest [1707 feet]. The county is chiefly agricultural, but contains a small coal-field. The Romans occupied the northern and more fertile district, and made use of the hot springs of Bath, which are still resorted to by invalids. Bath and Wells are two cathedral cities, the latter being especially interesting from the perfect preservation of its different ecclesiastical buildings. Taunton, the county town, stands in the pleasant vale of the Tone. Bridgewater, a sea-port on the Parret, is connected with Exeter by means of a canal, so that vessels can be taken across the peninsula.

DORSET [area 980, pop. 191,028]—the land of the Dorn-sætas or men of Durnovaria or Dorchester—is characterised by a high range of chalk hills which, beginning in the western part of the county, broadens out eastwards, and near Dorchester branches into

two—the northern and longer arm running north-eastward to Salisbury, the southern striking eastward close to the sea and projecting in a bold headland with some isolated stacks of chalk between Swanage and Studland Bay. It is this southern arm which is prolonged eastward as the central ridge of the Isle of Wight. The part of Dorset between the two belts of downs is a wide plain falling gently eastwards into the inlet of Poole harbour. The coast-line abounds in picturesque scenery between Weymouth and Studland Bay, St. Alban's Head [440 feet] being one of the finest promontories on the south coast of England. Dorchester, the county town, was a British town before it was occupied by the Romans, and has some interesting earthworks, particularly the Maiden Castle, 2 miles to the south, which is the largest of all the remaining ancient British fortifications, for its ramparts enclose an area of 115 acres. Weymouth is a favourite watering-place. Portland Isle, connected by a long shingle beach with the mainland, has large quarries of building-stone, a convict prison, and a great break-water which forms a harbour of refuge. Lyme Regis is noted for its cement-stone, and Poole for the fine white clay which it sends to the potteries.

DEVONSHIRE [area 2586, pop. 603,595] was in Roman times inhabited by Cymry, who called it Dyvnaint. This word in the mouths of the Roman conquerors was softened into a form which sounded less harsh, and its inhabitants were accordingly called Damnonii; but as the Celtic people still lived there and spoke their language when the Saxons in the early part of the ninth century overran the country they were called by the English-speaking settlers Defna-

sætas, or Devon men. Devonshire, stretching across the whole breadth of the peninsula, has a coast-line on the Bristol Channel and another on the English Channel, both rocky and full of picturesque headlands and bays. It is diversified by many rising grounds, of which the most important are the high, bare, granite uplands of Dartmoor [above 2000 feet], the Blackdown Hills east of the vale of the Exe and Culm, and the elevated moorland which in the north of the county runs eastward into Exmoor in Somerset. The low grounds are fertile, and the vegetation luxuriant. Devonshire and Cornwall form the chief mining districts of England. Exeter, which appears to have been a town before the Romans came, is now a cathedral city and the capital of the county. Plymouth and Devonport, with their magnificent natural harbour and numerous inlets, form one of the great naval stations of the country. Torquay, a much-frequented watering-place, stands on the northern horn of Tor Bay, in which William of Orange landed in England in 1688. Axminster, on the Axe, was formerly noted for its carpets. Honiton makes a well-known kind of lace.

CORNWALL [area 1349, pop. 330,686]—"the land of the Corn-wealas" or Welsh (strangers) of the Horn or peninsula—retains in its name a record of the long survival of their habits and language among the Celts who peopled that remote part of the island. This county is entirely bounded by the sea, except along its eastern margin, where it adjoins Devonshire. Its coast-line is for the most part rocky and picturesque, rising into lofty ranges of cliff and headland, and retreating into sheltered bays and white-beached sandy coves. The general surface is irregularly un-

dulating, with many bare heathy ridges and hills. The soil is generally thin, stony, and poor, the chief wealth of the district lying in the minerals underneath, especially the tin and copper. The Cornish towns are all of small size. Bodmin, Truro (now a cathedral town), and St. Austell are mining centres. Launceston lies to the north of the mining districts. Falmouth has an important natural harbour. The small ports on both sides of the county, especially Penzance and St. Ives, are centres for the pilchard fishery.

Wales takes its name from the same old English word "wealas," meaning strangers, which occurs in the name of Cornwall. The name thus carries us back to the early time when the Saxons were driving back the Britons, whose language sounded so uncouth to Teutonic ears. Pushed westwards into the hill country, these Britons have maintained there their individuality; still speak their ancient language; and are still called Welsh by their Saxon neighbours. They called themselves Cymry, and their country was known as Cambria, or the land of the Cymry. They remained an independent people until the thirteenth century, when they were finally conquered by the English. Yet the memory of the separate existence of Wales is preserved in the title of the eldest son of the sovereign of Great Britain, who is called Prince of Wales, and in the name of Principality which is still given to Wales as a whole. The area of Wales is 7363 square miles, or not quite a seventh of that of England.

Wales is distinguished from the greater part of England by its much more hilly surface and the

smaller proportion of productive ground. The larger part of the surface is in mountain pasture, only the bottoms of the valleys and the low grounds bordering the sea being fit for the plough. Of the Welsh hills the loftiest and most extensive are those which rise in different groups throughout the north-western part of North Wales, culminating in Snowdon [3571 feet]. These rugged grounds are traversed by deep and narrow valleys and passes, of which the Vale and Pass of Llanberis are the most celebrated. In the heart of the country is Plinlimmon [2469 feet], from the sides of which the Severn and the Wye take their rise. In South Wales the hills are much less rugged than in the northern district, but they rise into the long bare heights of the Beacons of Brecon [2862 feet] and the bleak moorlands of the great South Welsh coal-field.

The watershed of Wales, like that of England, keeps nearer to the western than the eastern boundary. The larger streams consequently flow eastward into England. These have already been referred to. The westward-flowing streams have short rapid courses to the Irish Sea, the largest of them being the Teifi. Those which descend into the Bristol Channel have likewise a comparatively short descent, the longest of them being the Towy.

The people of Wales represent the Britons who once inhabited all England (p. 22). In 1881 they numbered 1,360,513, being in the proportion of 184 to every square mile. Wales is divided into twelve counties, three of which are entirely inland adjoining the English border, while the others are partly bounded by the sea.

ANGLESEY [area 302, pop. 51,416] was known

to the Romans as *Mona*, which is probably a corruption of its old Celtic name. The present name, meaning "the island of the English," was not given to it until after the conquest of the district by the Saxons in the ninth century. Anglesey is separated from the mainland by the narrow passage of the Menai Strait (p. 41). Unlike the rest of Wales, it is low in level, but the western coast has some fine cliff scenery. It possesses a small coal-field and veins of copper ore. Beaumaris retains the French name ("beau marais," fine meadow) given to it by Edward I., who built on the flat ground at the northern entrance of the strait a strong castle, now in ruins, for guarding the passage. Holyhead is the chief port for steamboat communication with Dublin.

CAERNARVONSHIRE [area 577, pop. 119,349] includes the highest ground and some of the finest scenery in Wales. A lofty range of hills, culminating in Snowdon [3571 feet], runs through it from north-east to south-west. Large slate quarries are worked in the north near Bangor. The county town, Caernarvon, has a fine well-preserved castle, built by Edward I., and in which his son Edward II. was born. Bangor is the seat of a bishopric, and now possesses a college. Conway is remarkable for the most picturesque of the castles built by Edward I. for the retention of his hold upon the turbulent Welshmen. Llandudno, near the Great Orme's Head, is a watering-place.

DENBIGHSHIRE [area 664, pop. 111,740] is for the most part hilly, but contains portions of the valleys of the Conway and Clwyd and the Vale of Llangollen, through which the Dee flows. In its north-eastern part it has a coal-field, which is exten-

sively worked. Denbigh, the county town, stands in the midst of a quiet agricultural region in the Vale of Clwyd; but Ruabon and Wrexham are busy mining centres.

FLINTSHIRE [area 252, pop. 80,587] forms a narrow stretch of ground lying between the estuary of the Dee and the Vale of Clwyd. Its western boundary is hilly ground, which falls eastward to the Dee. The low grounds, bordering the estuary of the Dee, are occupied by a valuable coal-field, on which stand the small towns Mold and Flint. Rhyl is a growing watering-place at the mouth of the Clwyd; and a few miles higher up is the little town of St. Asaph, with a cathedral.

MERIONETHSHIRE [area 601, pop. 52,038] is a tract of wild hilly ground, including the peaks of Arenig, Cader Idris, Aran Mowddwy, and other conspicuous summits of North Wales. Some of its lakes and valleys are of great beauty, and it includes Bala Lake (p. 48), the largest sheet of water in Wales. Slates are quarried in various places, and gold has long been worked to a small extent in the valley of the Mawddach. Dolgelly is the county town; Harlech, on the coast, has the ruins of one of the Edwardian castles; and Corwen on the Dee was a stronghold of Owen Glendower.

CARDIGANSHIRE [area 692, pop. 70,270], lying along the wide curve of Cardigan Bay, is low towards the sea, but rises inland into high uplands, which reach in Plinlimmon a height of 2469 feet. A number of valleys cross these heights and carry the drainage down to the sea. The chief industry is the rearing of sheep, cattle, and horses. There are also mines of lead and copper ore. Cardigan, the capital,

is a small fishing town at the mouth of the Teifi. Aberystwith (aber = at the mouth of) stands at the mouth of the Ystwith, and is the seat of one of the Welsh colleges. Aberaeron, at the mouth of the Aeron, is a little watering-place.

MONTGOMERYSHIRE [area 773, pop. 65,718] is an inland county, consisting almost wholly of hilly ground, but with some fertile valleys intersecting it. It includes the high uplands in which the Severn and Wye take their rise. It is noted for its sheep and ponies, and is the chief centre for the manufacture of Welsh flannel, which is carried on at Montgomery, Welshpool, and other small towns.

RADNORSHIRE [area 432, pop. 23,528], is also an inland county, consisting chiefly of hilly pastoral moorlands, through which flow the Wye, Ython, Arrow, Lug, and other streams. It has a few small towns, of which the chief are New Radnor, Presteign, and Knighton.

BRECKNOCKSHIRE or BRECON [area 719, pop. 57,746], the third of the inland counties of Wales, is a region of pastoral uplands traversed by the Wye, the Usk, and their tributaries, and rising southward into the high plateau of the Beacons of Brecon [2862 feet]. Along its southern border it reaches the edge of the great Welsh coal-field. Its towns are small and unimportant, the chief of them being Brecknock, Crickhowell, and Builth.

GLAMORGANSHIRE [area 807, pop. 511,433], lying along the Bristol Channel, has its highest ground along its northern border, whence its streams flow southward across the broad, level, and very fertile tract, that borders the sea. As this county embraces by much the largest part of the great coal-field of South

Wales its chief industry is the mining of coal and iron, both of which occur in vast amount and of excellent quality. The great mining centres are Merthyr Tydvil, Dowlais, Aberdare, and Hirwain. Cardiff, the county town, is an important port, and has a university college. Llandaff is the seat of a bishopric. Swansea is the centre for the copper smelting of Britain, copper ore being imported from all parts of the world to be treated there and exported as metallic copper.

CAERMARTHENSHIRE [area 928, pop. 124,864], the largest county of Wales, has a coast-line along the Bristol Channel, whence it runs up into the high bare uplands of the interior, with the Towy flowing in a wide valley down its centre. Caermarthen, the county town, is an active little port on the Towy. Higher up in the same valley are Llandeilo and Llandovery, small unimportant places, whose names are now known all over the world because they have been given to certain fossiliferous rocks originally found there.

PEMBROKESHIRE [area 611, pop. 91,824] is bounded by the sea on all sides except the east. Its surface, though highly irregular, is for the most part comparatively low, but rises in the north-east to above 1700 feet over the sea. It is traversed by a long strip of coal-field. On its southern coast is the magnificent natural harbour Milford Haven. Its towns are all unimportant, the chief being Haverfordwest; St. Davids, with a cathedral; Pembroke and Milford on Milford Haven; and Tenby, on the coal-field that flanks the west side of Caermarthen Bay.

Islands.—Compared with Scotland and Ireland,

England has few islands off its shores. On the west side are the Isle of Man and Anglesey. The ISLE OF MAN [area 227, pop. 54,089], lying in the Irish Sea, rises in its highest summit (Snaefell, Norwegian for snow hill) to a height of 2034 feet above the sea. Most of the ground is hilly except the part north of Ramsay, which is a great plain. Veins of lead are worked among the hills, but most of the industry is connected with agriculture and fishing. The people of this island, called Manx, are a branch of the Gaelic Celts, but they have nearly ceased to use their ancient language. They have a legislature distinct from that of Great Britain, called the House of Keys, and are placed under a governor appointed by the British Government. The chief town is Douglas. Anglesey is described at p. 74.

The SCILLY ISLES, to the south-west of Cornwall (supposed to be the Cassiterides, or Tin-islands of the ancients), consist of about 140 islands and rocks, of which, however, only five are inhabited, the largest, St. Mary's, being not more than about 9 miles in circumference. The people live chiefly by fishing, and their mild, moist climate enables them to raise early vegetables for the London market.

The ISLE OF WIGHT lies off the coast of Hampshire, to which county it belongs. It is 23 miles in extreme length from east to west, and $13\frac{1}{2}$ miles from north to south, its highest point being 787 feet above the sea. Its chief physical feature is the lofty ridge of chalk downs which run as a backbone from the cliffs of the Needles to those of Culver (p. 71). The mild climate of this island has made it a great resort for consumptive invalids. Ventnor,

Shanklin, and Ryde are favourite sea-side places, while Cowes is a great centre for yachting.

The CHANNEL ISLES lie close to the coast of Normandy, and geographically form part of France, but as they were included in the domains of the dukes of Normandy, they have, ever since the Norman Conquest, belonged to England. They are attached to the county of Hampshire and diocese of Winchester. The chief of them are Jersey, Guernsey, Alderney, Sark, and Herm. They carry on a good trade both with England and the French coast. The people still speak an old dialect of French.

III—SCOTLAND

The name given to Scotland by the early Celtic natives of the country was Alban. About the beginning of the sixth century an Irish tribe called Scots crossed over from the north of Ireland and settled in the west of Scotland. They were of a kindred race to the Celtic people of Alban, and eventually amalgamated with them. When their kings succeeded to the throne, the whole country after the twelfth century came to be known as the kingdom of the Scots, or Scotland.

Scotland contains an area of 29,820 square miles, so that it is little more than half the size of England and Wales. It is much more irregular in shape than the southern half of the island, and is far more indented with inlets of the sea. The greatest breadth in an east and west direction is 157 miles, between the coast of Ross-shire and Buchan Ness. The narrowest part is only some 25 miles, between the estuaries of the Clyde and Forth. Except the land boundary

with England, Scotland is entirely surrounded with water. On the east side lies the North Sea, on the west the Atlantic Ocean. The narrow strait between the south-western part of the country and Ireland ($13\frac{1}{2}$ miles broad at the Mull of Cantyre and $21\frac{1}{2}$ miles between Portpatrick and Donaghadee) is known as the North Channel, and the most southerly coast-line is washed by the Irish Sea.

Surface.—Scotland presents a striking contrast to England, inasmuch as the proportion of its productive ground is only 28·8 per cent of the whole area, instead of 80 per cent as in England. The extent of waste land, bog, mountain, and water in Scotland is computed to be more than 21,000 square miles. Most of this unproductive ground lies in the northern and western tracts. Another remarkable difference between the two kingdoms is to be seen in the very different proportions of high and low ground. If Scotland were submerged 500 feet, a much less extent of it would be under water than in the case of England. A broad strait would then cover the country between the Firth of Clyde and the North Sea, a narrower sound would run from Loch Linnhe to the Moray Firth, and the lowlands along the east side of the country would disappear. But the southern and northern parts of the kingdom would still rise hundreds of feet above the sea.

Scotland may be naturally divided into three very distinct districts—the Highlands, the Lowlands, and the Southern Uplands. As in England, the characteristic scenery of each of these sections of the country arises from the great contrast between their rocks. The largest of the three districts, the Highlands, consists, as its name tells, mostly of elevated ground,

including nearly a half of the whole country. It is bounded to the south by a line drawn from the Firth of Clyde north-eastward to Stonehaven, but a selvage of low land runs northward from the latter place, spreads over the north-eastern part of the country, stretches westward around the Moray Firth and expands over the county of Caithness.

The materials that form the Highlands consist chiefly of different kinds of schists, granites, and other ancient rocks, and for the most part are harder and more durable than those of the lowlands. They are arranged in bands that, on the whole, run in a north-east and south-west direction. It will be observed from the map that this direction is also that of the whole mass of the Highlands and of the main valleys and hill ranges, as well as of a large number of the inlets of the sea. We thus perceive to how large an extent the fundamental character of the surface of the country depends upon the nature and arrangement of the rocks.

The Highlands are separated into two portions by the long straight hollow of the Great Glen, which, with its remarkable chain of lakes, runs from the head of Loch Linnhe to the Moray Firth. The north-western portion, consisting of the high grounds of Argyle, Inverness, Ross, and Sutherland, is deeply intersected with valleys, and along the west side with arms of the sea. The highest summits in the northern parts are Ben More of Assynt [3273 feet] and Ben Klibrick [3164 feet] in Sutherland, the Fannich Mountains in Ross-shire [over 3600 feet], and the range of heights between these and Loch Hourn, which here and there exceed 3800 feet in elevation. The portion of the Highlands lying to the south-east

of the Great Glen is cut into several subordinate parts by deep and wide valleys. Of these depressions the most important is that which runs from Dunkeld north-westward along the course of the Tay and the Garry rivers over the central ridge into the valley of the Spey. The tract lying to the east of this transverse valley includes the largest area of high ground in the British Isles, known as the Grampian Mountains. These heights rise to more than 4000 feet above the sea, their highest summit, Ben Macdhui, being 4296 feet. Between the valley of the Spey and Loch Ness lie the Monadhliath Mountains, some of which exceed 3000 feet in height. From the western end of the Grampian range a broken mass of lofty and exceedingly rugged ground stretches south-westward to Loch Linnhe, and rises in Ben Nevis to 4406 feet, the highest summit in the British Isles. None of the Scottish hills quite reach the snow-line, but in most of their higher clefts, facing north, deep wreaths of snow lie unmelted all the summer. The word "Ben" so generally prefixed to the names of the hills is the Gaelic word for a hill, and the word which follows it is usually a descriptive adjective, as Ben Dearg, the red hill; Ben More, the big hill.

The Lowlands form a broad valley or plain that crosses the island from sea to sea, and is well defined along its northern margin by the steep front that the Highland hills make from the Clyde to Stonehaven. The southern limit of this plain is marked by the line of heights which run from Girvan to Dunbar. Though called a plain, this wide tract of country is far from being level. It almost everywhere has an undulating surface, and is traversed by

some ranges of hills, of which the most important are the Ochils and Sidlaws, the Campsie and Kilpatrick Hills, the high moorlands that run from the north of Renfrewshire into Lanarkshire and Ayrshire, and the Pentland Hills. The district is further diversified with many isolated hills and crags, not infrequently crowned with castles, such as those of Edinburgh and Stirling.

Besides the great central lowland, there is a northern low country, which includes the eastern part of the county of Aberdeen, the northern portions of the counties of Banff, Elgin, Nairn, and Inverness, the eastern margin of Ross, Cromarty, and Sutherland, and the county of Caithness. Other tracts of low ground extend across the southern portions of the counties of Wigton, Kirkcudbright, and Dumfries, the eastern part of Roxburghshire, and the south-eastern part of Berwickshire.

The Southern Uplands form a broad belt of high pastoral country, seldom rugged in surface except towards the south-west, but consisting of smooth grassy hills traversed by narrow secluded valleys. These high grounds form a great ridge, which defines the southern limit of the central lowlands, and falls gently into the low grounds of the southern counties. Much of their surface exceeds 1500 feet, and here and there they rise to between 2000 and 2500 feet, their highest point being 2764 feet.

Coast-line.—The sea-board of Scotland illustrates the influence of the varying character of the rocks in forming promontories and bays. Most of it is rocky. The eastern side, less abundantly indented than the western, has, nevertheless, the deep and wide inlets of the Firths of Forth and Tay, as well as the group

of northern firths—those of Moray, Inverness, Beaully, Cromarty, and Dornoch. This word “firth” is the Norse *fjord*, an arm of the sea, and remains as one of the relics of the former presence of the northern Vikings along our shores. Again, the word “sound” is the Norse *sund* (what can be swum across), applied to narrow sea-straits, like the Sound of Jura. Near St. Abb’s Head the southern uplands abut against the sea in a range of magnificent precipices between 500 and 600 feet high, which are among the loftiest sea-cliffs on the east side of Britain. Another range of fine cliffs runs between Bervie and Stonehaven. Buchan Ness, the most easterly part of Scotland, is a low promontory of granite crowned with a lighthouse. The coast-line continues rocky but comparatively low most of the way round into the Moray Firth, but rises into fine cliffs at Troup Head. The coast of Caithness is one long line of sea-wall, ranging up to 300 feet in height, and here and there sinking into bays and creeks. The northern coast reaches its wildest grandeur about Cape Wrath, near which the sea-cliffs rise 600 feet above the waves, and are haunted by myriads of sea-fowl. The whole of the west coast is an intricate interlacing of land and water, the sea penetrating far into the mountains, and the land extending out to sea in innumerable islands and surf-beaten rocks. Among the most noted inlets of the sea for picturesqueness are Lochs Torridon, Duich, Hourn, and Nevis. Some of the most striking cliffs are to be seen in Handa Island and along the west side of Skye [1000 feet]. The most westerly promontory of the mainland is appropriately named Ardnamurchan, “the headland of the great sea,” for it looks out on the open ocean.

Drainage.—The water-shed keeps much nearer to the western than to the eastern sea-board of the Highlands. There is consequently no large river on the west side of that part of the country. In the lowlands, the water-shed crosses from Ben Lomond over the Fintry and Pentland Hills, and strikes up into the Southern Uplands, which it divides into two not very unequal parts. Hence the larger streams are there not all on the east side of the country.

Of the **eastern rivers** the more important are the following:—The Tweed [area 1870 square miles, length 97 miles] rises in the Southern Uplands, and, joined by the Ettrick, Gala, Teviot, Till, and Whitadder, enters the sea at Berwick. Next to the Tay it has the largest drainage-basin among the Scottish rivers. The portion of its course below Melrose is in lowland ground, and the last part skirts the wide plain known as the Merse of Berwickshire. The valley drained by the Tweed is called Tweeddale. The Forth [area 645, length 65], rising at the back of Ben Lomond, descends in a rapid course to the edge of the Highlands, and then slowly winds in endless curves (“Links of Forth”) through some flat morasses and a cultivated plain until, at Alloa, it merges into its estuary [51 miles long]. It is navigable by steamers to Stirling. The Tay [area 2250, length 94] drains a more extensive area than any other Scottish stream, and pours a larger volume of water into the sea than any other British river. It flows out of Loch Tay, which is fed by the streams that descend from the lofty hills of central Perthshire. Issuing from the Highlands by a narrow pass below Dunkeld, it winds across the lowland plain and, receiving the drainage of the Isla, enters

the sea at the head of its firth [$24\frac{1}{2}$ miles long]. It is navigable up to Perth. From the south-eastern flanks of the Highlands the drainage is conveyed to the sea by the North and South Esks and their tributaries. The Dee [area 765, length 87] has its source in the highest part of the Grampian range, whence it flows eastward, gaining large additions by the tributaries that pour into it from either side. It enters the low country (Deeside) at Banchory, and falls into the sea at Aberdeen, where its mouth forms an important harbour. The Don [area 530, length 82] springs from the north side of the higher Grampians, and flows eastward to Alford, where it enters the lower country, through which it winds, to fall into the sea not far from the mouth of the Dee. A large part of the north-eastern lowlands of Aberdeenshire is drained by the Ythan. The Deveron, which has its source in the high grounds on the borders of Banff and Aberdeenshire, comes out of the hills near Huntly, and winds across the low grounds until it falls into the sea at the town of Banff. The Spey [area 1390, length 107], the most impetuous river in Scotland, issues from a little lake in the uplands of Inverness-shire at a height of 1142 feet above the sea, and sweeps north-eastward in a tolerably straight course to the sea through its broad valley, which is called Strathspey. Of the numerous streams that drain into the northern firths, the chief are the Findhorn and Nairn, which carry the drainage of the northern flanks of the Monadhliath Mountains into the Moray Firth; the Ness, which conveys the surplus water from the great basin of Loch Ness into the Inverness Firth; the Beaully, which falls into the shallow Beaully Firth; the Contin, which is

filling up the higher part of the Cromarty Firth with sediment; and the Oykil and Shin, which pour into the head of the Dornoch Firth.

The **western rivers** are few in number. None of them, except small streams, belong to the Highlands. The largest is the Clyde [area 1580, length to Dumbarton 98], which, rising on the opposite side of the ridge that supplies the sources of the Tweed, flows northward through the Southern Uplands, enters the lowlands below Abington, and pursues a winding course until it throws itself over the three cascades called the Falls of Clyde, and after traversing the great coal-field enters its estuary. It is navigable for large vessels as far as Glasgow, but the channel has been artificially deepened, and its depth is maintained only at great labour and cost. The rivers Irvine, Ayr, and Doon drain the western part of the lowlands into the Firth of Clyde. The Girvan and the Stinchar carry off the drainage of the western end of the Southern Uplands. On the south side of these uplands the Luce, Cree, Dee, and Urr drain the highest portion of the district into the Irish Sea. The Nith, rising on the north side of the uplands, turns round and flows completely across them in the long valley of Nithsdale and till it enters the Solway Firth. It is navigable up to Dumfries. The Annan, rising from the same ridge that supplies the Tweed and Clyde, flows southward in the wide fertile valley known as Annandale to the Solway Firth at the little port of Annan. The Esk, descending its valley of Eskdale and augmented by several tributaries, of which the largest is the Liddel coming down Liddesdale, enters the head of the Solway Firth amid wide stretches of sandbanks and mud flats.

Scotland is celebrated for the number and beauty of its lakes. Of those in the Highlands, Loch Lomond is the largest and one of the most picturesque. Others, noted for their scenery, are Loch Maree, Loch Katrine, Loch Achray, Loch Tay, Loch Lubnaig, Loch Earn, Loch Avon, among the more savage Grampians, and Loch Coruisk in Skye, a tarn surrounded with some of the darkest and most rugged crags in Britain. The bottom of Loch Ness [780 feet deep] is deeper than the bed of the North Sea. In the lowlands, the two chief lakes are Loch Leven and the Lake of Menteith. In the Southern Uplands, the lakes lie chiefly to the south-west, the largest of them being Loch Doon.

Mineral Fields.—The mineral wealth of Scotland consists almost wholly of coal and iron. A great part of the central lowlands is occupied with coal-fields, of which the largest are those of the Clyde, Lothians, Fife, and Ayrshire. Iron is found in most of these fields. Oil shale, from which mineral oil is distilled, is most abundant in the Lothians. Lead has long been worked in the Leadhills among the uplands of Lanarkshire and Dumfriesshire. Building-stone of many different kinds is found so abundantly throughout the whole country that brick is but little used except for inner walls and factory chimneys. The white sandstones of Glasgow, Edinburgh, and Elgin, the red sandstones of Dumfries and North Ayrshire, the gray granite of Aberdeen and Galloway, and the pink granite of Peterhead are not only largely used in Scotland, but are sent to distant parts of the kingdom.

Population and Political Subdivisions.— The population of Scotland at the census of 1881

amounted to 3,735,573, consisting of 1,799,475 males and 1,936,098 females. If these inhabitants were equally distributed over the whole country there would be 125 persons to every square mile. There are still two distinct races in Scotland. The original Celtic population retaining its Gaelic speech remains in the Highlands; but the lowlands, which they once possessed, have for many centuries been occupied by Teutonic people, who, though descended from different kindred tribes—Angles, Danes, or Norse—have long ago amalgamated into one English-speaking race. All through the lowlands, which stretch round the eastern and northern flanks of the Highlands and in Caithness, the people and language are English. Thus even to this day the limits of highland and lowland ground, which originally determined the areas of the two races, still serve in a general way to mark off the districts which they respectively inhabit.

Scotland is divided into thirty-three counties. These seem to have arisen gradually out of the sheriffdoms into which David I., in the first half of the twelfth century, subdivided the country. They are consequently neither so ancient nor so natural as those English shires which represent old Saxon kingdoms and tribal districts. Besides the counties, various territorial names, some of them probably older than those of the counties, are still used, such as Buchan, Angus, Lochaber, Badenoch, Galloway, Clydesdale, Teviotdale. Some of these names correspond to the territories of old earldoms, others are based on obvious geographical features. In the following enumeration the areas are given in square statute miles, and the population at the census of 1881.

ORKNEY AND SHETLAND.—This long group of islands forms a separate county. Its extreme length is about 170 miles. The Orkney Islands [area 375, pop. 32,044] consist of 28 inhabited and 39 uninhabited islands, besides many islets and skerries. They form a continuation of the low plain of Caithness, like which they present almost everywhere to the sea a line of vertical cliffs. The only island wherein the ground rises into prominent hills is Hoy [1564 feet], where the sea precipices tower more than 1100 feet above the waves. There are hardly any trees, and the cultivation is chiefly of oats and green crops. A large part of the population lives by fishing, and being descendants of the old Norsemen, they make excellent boatmen. The only towns are Kirkwall, which has the stern old cathedral of St. Magnus, and Stromness, near to which is a remarkable circle of standing stones. The Shetland Islands [area 551, pop. 29,705], about 100 in number, of which 29 are inhabited, lie farther north, have a less favourable climate and more unproductive soil. The agriculture is scanty, but there are excellent fisheries, which give employment to the population; and the Shetland sheep yield a peculiarly soft wool, which is much in request for worsted articles. Lerwick, the only town, is a quaintly-built place, frequented as a harbour of refuge by vessels of all nations on the way to or from the north. The Orkney and Shetland Islands contain many interesting antiquities—broughs, howes, stone circles, Pict's houses, etc.

CAITHNESS [area 685, pop. 38,865], with the exception of some hills along its southern border, is a wide, bare, treeless plain partly cultivated, partly covered with extensive peat-mosses, and girt round

with vertical walls rising from 100 to 300 feet in height above the sea. Dunnet Head is a precipice of yellow sandstone more than 300 feet high. The county furnishes hard flagstones, which are extensively shipped for pavements. A large part of the population live by fishing. The little coast towns have been built where the line of cliffs sinks down into sandy bays. Wick is a great centre for the herring-fishery. Thurso is noted for its salmon and its flagstones. John o' Groat's House is the most northerly hamlet on the mainland of Scotland; hence the saying, "From Land's End to John o' Groat's," meaning the whole of Great Britain. The tide past this place through the Pentland Firth runs at a rate of 11 miles an hour like a vast river, and is the swiftest tideway among the British Isles.

SUTHERLAND [area 2027, pop. 23,370] received its name from the Norsemen of Orkney, to whom it was the "southern land." It is a rugged, hilly region rising into bare summits, some of which are more than 3000 feet above the sea. Like the rest of the Highlands, most of this county is in sheep-farms; but the wilder mountain ground is deer-forest. The Scottish deer-forests are generally entirely without trees. Along the coast, especially on the east side, and in some of the valleys, there are strips of cultivation, and trees begin to make their appearance. Dornoch, the little county town, has given its name to the arm of the sea on which it stands.

ROSS-SHIRE and CROMARTYSHIRE [area 3129, pop. 78,547] are so intermingled, separate patches of Cromarty occurring all over Ross, that they are now treated as one county. Along the eastern border, the district between the Dornoch and the Beaully

Firths lies on red sandstone, is well cultivated, and forms some of the best corn-land in the north of Scotland. But all the rest of the region, which in the west rises to heights of between 3000 and 4000 feet, is rugged hilly ground. The valleys are partly cultivated. Dingwall, the county town, retains in its Norse name another record of the northern race who peopled these shores. Cromarty is a little herring-port at the mouth of the firth which bears its name. Tain is a quaint old town on the Dornoch Firth. The Island of Lewis [area 876, pop. 28,339] in the Hebrides belongs to Ross-shire. It is distinguished by the prodigious number of its lakes and its bare, rocky, treeless, boggy, and moorland surface. Its only town, Stornoway, is a great centre for the herring-fishery.

INVERNESS-SHIRE [area 4088, pop. 90,454] is the largest of the Scottish counties, and presents the greatest variety of surface. By much the largest part of it is high moorland and rugged hilly ground. Some of the more important heights are Ben Nevis [4406 feet], the highest summit in the British Isles; Carn Eige [3877] in Glen Affric; Meall-Fuarmhonaidh [2284, pronounced Meal-fooar-vounie], overlooking Loch Ness; Ben Screel [3196], on Loch Hourn; Scur na Gillean [3167 feet] in Skye. Along the Beaully and Moray Firths, and in its numerous deep and wide glens, this county falls into low and comparatively fertile ground. The wilder and more inaccessible tracts are kept as deer-forests, while the other hilly land is used for pasturing sheep, and the moors are preserves for grouse, black cock, and other game. The chief valley is the Great Glen, the longest, straightest, and deepest in the British Isles, the

whole of which lies in this county. The Caledonian Canal connects its lakes with each other and the sea, and permits vessels and steamers to cross the country. Other valleys strike westward from this great depression to the heads of the western sea-lochs, but there is little traffic in them, as there are no towns or villages on that part of the Scottish coast-line. Inverness, the county town, is the most important centre of population and trade in the Highlands. To Inverness-shire belong Skye and the adjacent islands, and all the Outer Hebrides except Lewis. Skye is famous for its scenery, especially for that of Coruisk and the Coolin Hills and the cliffs along its east and west coast. The Outer Hebrides form an archipelago about 130 miles long, which, as it has only one practicable channel for large vessels—that of the Sound of Harris—is often called the Long Island. Harris, which with Lewis forms one island, is the most mountainous part of the whole group. The climate of the Hebrides is mild but boisterous, and the soil scanty and poor. The people live chiefly by fishing. The Hebrides were called “Sudreys” or Southern Isles by the Norsemen, who possessed them until 1266, and this name is still preserved in the title of the Bishop of Sodor and Man.

ARGYLESHIRE [area 3213, pop. 76,468] is of all the Scottish counties the most deeply cleft by arms of the sea. Notice the prevalent north-easterly trend of its inlets and of its ridges and islands, all pointing to the dominant structure of the rocks of the region. By the long inlet of Loch Linnhe, Argyleshire is cut in twain. The transverse depressions, that is, those which run in a general north-west and south-east direction, further disconnect portions of the

county into islands, as happens at the Sounds of Mull, Scarba, and Islay. A canal has been cut across the low piece of land between Lochs Crinan and Gilp, so that the whole of the long peninsula of Cantyre has been artificially separated from the rest, and vessels can pass across it. Nearly the whole of the county is hill and moorland, abounding in fine scenery, but there are cultivated tracts along the bays and bottoms of the valleys. Among the more important hills are Ben Cruachan [3689 feet]; Ben Lui [3708]; Buachaille Etive [3345, literally "the herdsman of Etive"]; the Cobbler [2891], on Loch Long; Ben More, Mull [3172]; Paps of Jura [2571]. The county town is Inverary—a quiet, sleepy place out of the way at the head of Loch Fyne. Much more important are Dunoon, a watering-place on the Firth of Clyde; Oban, the centre of the traffic of the West Highlands; and Campbelton, in Cantyre, with a small coal-field and important distilleries. To Argyleshire belong the islands of Mull, Jura, Islay, Coll, Tiree, Colonsay, Staffa (famous for its columnar cliffs and Fingal's cave in them), and Iona, celebrated as the site of the monastic settlement founded by St. Columba, who converted the Picts to Christianity, and as a burial-place of the earliest kings.

NAIRNSHIRE [area 178, pop. 10,455], like the other counties bordering the Moray Firth, consists of a southern hilly and moory district, and a northern low fertile tract between the hills and the sea. The two rivers, Nairn and Findhorn, which flow across the country, have some fine ravines. The population is chiefly found in the fertile region, and is mainly engaged in agriculture and fishing. There is only

one village, Auldearn, which has more than 300 inhabitants, and the only town is Nairn.

ELGINSHIRE or MORAY [area 475, pop. 43,788] has a wide rolling fertile lowland stretching from the coast inland for some six or eight miles, beyond which the ground rises up into bare hilly moorlands, some parts exceeding 1700 feet in height. These uplands descend on the southern side into the valley of the Spey. About a fourth of the whole county is cultivated. Elgin, the county town, is noted for the ruins of a beautiful cathedral. Forres is perhaps best known from Shakespeare's reference to it in *Macbeth*. Lossiemouth is the port of Elginshire.

BANFFSHIRE [area 686, pop. 62,736] consists of two parts, the southern being wild, hilly ground rising up into the higher Grampians, the crests of which form its southern boundary, the northern sinking gently down into the fertile strip that runs along the shores of the Moray Firth. The county town, Banff, stands at the mouth of the Deveron River, and like the villages along the coast, Buckie, Cullen, Macduff, Portsoy, and others, is a fishing-port. The boats of the Buckie fishermen are among the largest and strongest to be seen in the north. There are various villages scattered over the interior, the largest being Keith and Duftown. The eastern part of the coast is a line of precipitous cliff, the most picturesque scenery lying to the east of Banff.

ABERDEENSHIRE [area 1970, pop. 267,990] includes in its north-eastern portion a wide area of low and more or less fertile ground (Buchan), but rises southward into bleak moors and rugged hills, which extend into the highest parts of the Grampian range.

It is traversed by the two main valleys of the Dee and the Don, and also by those of the Deveron and Ythan. Cattle-rearing is an important industry in the district of Buchan. The quarrying and polishing of granite employs a large number of workmen around Aberdeen and at Peterhead. Along the coast, fisheries are actively prosecuted. Farming is carried on in the lower grounds between the hills and the sea, and also for some distance up the main valleys. Aberdeen, the county town, is the chief centre of industry in the north-east of Scotland, and has a good harbour. It possesses a university and a cathedral. Peterhead is the chief port for the whale-fishing in this country. Fraserburgh is one of the great centres for the herring-fishery in the north of Scotland. In the interior there are numerous thriving villages. In the valley of the Dee is Balmoral, the Highland home of Queen Victoria.

KINCARDINESHIRE or MEARNs [area 383, pop. 34,464] is chiefly a region of undulating moorland, which reaches in Mount Battock a height of 2554 feet above the sea, but falls on the one side into the valley of the Dee and on the other into a long fertile hollow which runs south-westwards from Stonehaven along the base of the Highlands, and forms the plain of Strathmore ("great valley"). On the south side of this hollow the ground rises into a moory upland, which, beginning in a range of sea-cliffs south of Stonehaven, stretches to the south-west into the Sidlaw Hills of Forfarshire. The chief industries of the county are agriculture and the rearing of live stock; and along the sea-coast, fishing. Stonehaven, the county town, has a small harbour. Findon, Bervie, and Johnshaven are fishing hamlets on the coast.

In the hollow or "howe" stands Laurencekirk, and on the Dee is the pretty village of Banchory, now a frequented summer resort.

FORFARSHIRE or ANGUS [area 875, pop. 266,360] consists of four parallel strips of country. In the north, and occupying quite a half of the whole county, is the hilly region which ascends to the crest of the high ridge [2500 to 3500 feet] that descends on the northern side into the valley of the Dee. This wild tract is mostly sheep-walks, grouse moors, and deer-forest. To the south of it lies the wide and fertile valley of Strathmore. Next comes the ridge of the Sidlaw Hills, and their continuation into Kincardineshire; and lastly, a strip of fertile lowland intervenes between these hills and the sea. The general industry of the county is agriculture. The fisheries are actively prosecuted on the coast, and factories for various textile fabrics give employment to many thousands of people. There are no fewer than five towns, each with more than 10,000 inhabitants—Dundee, Arbroath, Montrose, Forfar (the county town), and Lochee. Dundee, with its great linen and jute manufactures, and its export and import trade, is one of the chief towns of Scotland. Other smaller towns are Brechin, Broughty Ferry, Kirriemuir, and Carnoustie.

PERTHSHIRE [area 2527, pop. 129,007], the central county of the southern Highlands, contains a large part of the best known and most romantic scenery of Scotland. A line drawn in a north-east and south-west direction, from Aberfoil by Callander and Dunkeld to Alyth, marks the division between the Highlands and the Lowlands. All the region to the north of that line is characteristically Highland ground

—wide undulating moors rising here and there into rugged hills and cliffs, and sinking down into numerous narrow glens and wider straths that carry the drainage seawards. The principal valley is that of the Garry and Tay, which affords the only practicable route from the Lowlands across the Highlands to the low grounds of the Moray Firth, and is followed by a high road and the Highland Railway. In the south-west are Lochs Katrine, Achray, and Vennachar, with the narrow defile of the Trossachs, and a great array of mountains—Ben Ledi [2875 feet], Ben Venue [2393], Ben Voirlich [3224]. This is the scene of Scott's poem of *The Lady of the Lake*. Loch Tay, the largest lake in Perthshire, is surmounted by Ben Lawers [3984 feet], the highest mountain. South of the Highland boundary line the ground is a continuation of the great hollow of Strathmore, which on the southern side is bounded by the range of the Ochil and Sidlaw Hills. The county extends across the Sidlaws down to the Firth of Tay, and includes the flat singularly fertile Carse of Gowrie. It likewise stretches across the western end of the ridge of the Ochils, and a detached portion lies along the edge of the Firth of Forth, so as to take in a few square miles of a valuable coal-field. Perth, the county town, stands in the gap through which the water of the Tay escapes across the Ochil ridge. Other towns with more than 3000 inhabitants are Crieff and Blairgowrie. Dunblane has a fine but partly ruined cathedral. Callander is an attractive village for summer visitors. At Scone, near Perth, the Scottish Kings used to be crowned.

FIFE [area 492, pop. 171,931], lying between the two estuaries of the Forth and Tay, has a coast-line

for most of its boundary. Its surface is one of the most varied in the lowlands. In the north, a spur from the Ochil Hills runs eastward to the mouth of the Firth of Tay. South of that ridge lies a broad fertile valley, known as the Howe of Fife, which, drained by the Eden, is bounded on the southern side by the range of broken heights that runs from the two Lomond Hills [1713 feet] to Cupar. A constant succession of conical and irregular hills extends through the heart of the county, from the Saline Hills [1178 feet] in the south-west by Beith, Burntisland, Largo Law [965 feet], and Kellie Law, to St. Andrews. The coast-line along the Tay is somewhat tame. From Ferryport to the mouth of the Eden there runs a broad belt of sand-dunes called Tents Muir. East of St. Andrews the shores are low, but rocky and picturesque, projecting in the sandstone cliffs of Fife Ness into the North Sea. Along the Firth of Forth there is great variety of scenery, according to the predominance of volcanic rocks. The low sandstone cliffs have been hollowed into caves. Fife is one of the busiest of the lowland counties, for besides its agriculture, it abounds in flourishing villages and towns, where textile manufactures are carried on; its ports are active centres of fishing; and it possesses in the south-west a large and valuable coal-field. Cupar, the capital, stands in an agricultural inland district. Dunfermline, in the south-west, lies in the midst of the coal-field, has the remains of a royal palace, with a fine Norman abbey church (in which Robert the Bruce is buried), and carries on the manufacture of table-linen more extensively than any other place in the country. St. Andrews, once the seat of an archbishopric, has the ruins of a

cathedral, and possesses the oldest of the four Universities of Scotland. The numerous towns along the southern coast are for the most part old, and retain a good deal of their quaintness, together with the busy ways of modern trade and manufacture. The largest of them, Kirkcaldy ("Church of the Culdees"), with upwards of 23,000 inhabitants, has numerous factories and coal-pits. The eastern coast towns are fishing-ports.

KINROSS-SHIRE [area 72, pop. 6697], a small inland county, of which the northern part extends up into the pastoral moorlands of the Ochil Hills, while the central and southern tracts are low and fertile, rising into the slopes of the Lomond Hills on the east, and the Cleish Hills on the south. More than 5 square miles of this lowland are covered by the waters of Loch Leven, a lake famous for its trout and for its old island castle in which Mary Queen of Scots was imprisoned. The county town, Kinross, and Milnathort are its only towns.

CLACKMANNANSHIRE [area 47, pop. 25,680], the smallest of the Scottish counties, consists of two contrasted portions, of which the southern extends as an undulating plain from the edge of the Firth of Forth to the base of the Ochil Hills, that rise up steeply to form the northern upland and pastoral district. The lower district lies on a valuable coal-field. Clackmannan, though the nominal capital of the county, has been eclipsed by Alloa, a busy manufacturing seaport.

STIRLINGSHIRE [area 447, pop. 112,443], like Perthshire, includes a Highland and a Lowland portion, which are separated by a line drawn across the county from Aberfoil to near the foot of Loch

Lomond. The northern mountainous part is a long narrow strip consisting of the high ridge which lies between Loch Lomond and the chain of small lakes on the east, and which culminates in Ben Lomond [3192 feet]. The southern and larger part of the county is formed chiefly of the wide pastoral uplands of the Lennox (or Campsie and Fintry) Hills, which on the north side descend into the broad plain watered by the River Forth, and on the south and east sides sink abruptly into the great plain of the western coal-field. The eastern edge of the county along the margin of the Forth from Stirling to Falkirk is a level plain, slightly raised above the sea, and known as the Carse. The hilly tracts are chiefly devoted to pasturing sheep. The low grounds are well cultivated, and where they lie on the coal-field are the seat of many industries, particularly woollen and cotton mills, print-fields, chemical works, iron manufactures, and distilleries. Stirling, the capital, with its ancient castle perched on the summit of a crag, was an important place in old times, for it commanded the only practicable land route to and from the Highlands. Falkirk is noted for its iron-wares and cattle markets.

DUMBARTONSHIRE [area 241, pop. 75,333], like the counties to the east of it, embraces a Highland and a Lowland district. Beginning at the head of Loch Lomond, it includes all the high ground, from 2000 to 3000 feet in height, between that noble sheet of water and Loch Long. A broad valley into which the lower end of Loch Lomond projects intervenes between the base of the Highland district and the Kilpatrick Hills, which are a continuation of the

Campsie Hills of Stirlingshire. A strip of low ground also lies between the Kilpatrick Hills and the Clyde, and another strip totally detached from the main part of the county skirts the base of the southern flank of the Campsie Hills, and includes a portion of the great coal-field. The county town, Dumbarton ("the dun or fort of the Britons," who themselves called it Alcluyd) was the capital of the ancient British or Cymric kingdom of Strathclyde. Its castle on the steep rock overlooking the river is almost the only relic of antiquity in the modern town, which is now a busy port, with large ship-building yards. Higher up on the Leven, which discharges the surplus waters of Loch Lomond, are the thriving manufacturing towns, Alexandria and Renton. On the detached part of the county stands Kirkintilloch, with mines of coal and ironstone. Helensburgh and Kilcreggan are watering-places.

EDINBURGHSHIRE or MIDLOTHIAN [area 362, pop. 389,164], the central, largest, and most important of the **LOTHIANS**, as the counties of Linlithgow, Edinburgh, and Haddington are called, consists chiefly of high pastoral uplands in the south, whence the ground declines into an undulating fertile plain that falls gently to the Firth of Forth. From the southern uplands the long ridge of the Pentlands [1898 feet] projects north-eastward to within a few miles of Edinburgh. The plain is further diversified by many lesser and isolated eminences, such as Arthur's Seat [822 feet] and Calton Hill. To the east of the line of the Pentland Hills lies the valuable Midlothian coal-field; to the west, the district where shale is found for making mineral oil. Edinburgh, the county town and capital of Scotland, is one of the most

striking cities in the world. It consists of the Old Town, built in lofty ranges of picturesque houses along a narrow ridge which terminates westward in a precipitous crag crowned with an ancient castle, and of the New Town, lying to the north, and built in regular squares. It is the seat of the law courts, and has a University with upwards of 3000 students, its medical school being one of the most flourishing and distinguished in the world, and attracting pupils from all quarters of the globe. It has a population of about a quarter of a million. Connected with Edinburgh by a continuous line of buildings is the active seaport Leith, with long piers and docks. Dalkeith is an agricultural town in the midst of the coal-field; Musselburgh, an ancient fishing town; Portobello, chiefly frequented for sea-bathing; West Calder, in the oil-shale district.

LINLITHGOWSHIRE or WEST LOTHIAN [area 120, pop. 43,510] is moory and upland in the south-western part, and lower and better cultivated towards its coast-line. Its surface is greatly diversified with prominent and often craggy hills, of which the chief run in a long ridge from Bathgate to Linlithgow, and rise to 1000 feet above the sea. To the west of this ridge lies the great coal-field, and to the east the oil-shale district. Linlithgow, the county town, has an interesting ruined royal palace on a lake, where Mary Queen of Scots was born. Bathgate is a great mining centre.

HADDINGTONSHIRE or EAST LOTHIAN [area 270, pop. 38,502] like the rest of the Lothians is hilly moorland on the south, and undulating fertile lowland to the north. Its southern margin runs along the crest of the pastoral uplands of the Lammermuir

Hills, which undulate up to more than 1700 feet above the sea. The low grounds are diversified by the group of the Garlton Hills and the conical North Berwick Law, opposite to which is the Bass Rock, a craggy island crowded with sea-fowl at the entrance to the Firth of Forth. The county is essentially agricultural, but coal is worked in its western portion, and fishing is prosecuted at its coast towns. Its county town, Haddington, was the birthplace of John Knox. Dunbar, a fishing port, was once famous in Scottish history for its strong castle perched on a crag overhanging the waves, but owing to the inroads of the sea most of the ruin has disappeared.

PEEBLESHIRE [area 354, pop. 13,822] lies almost wholly among the Southern Uplands, and its surface is mainly high bare moorland, devoted to sheep. Its highest summits along its southern border rise to heights of more than 2600 feet above the sea. It extends northwards so as to include the southern end of the Pentland Hills and the extremity of the Midlothian coal-field. Its chief low grounds lie in the valleys of the Lyne Water, Manor Water, and Tweed, and are dotted with farms, the fields of which are gradually being extended up the hill slopes on either side. Peebles, the capital, is a quiet little town on the Tweed much frequented by anglers. Innerleithen, on the Leithen Water, has a mineral spring and woollen manufactures.

SELKIRKSHIRE [area 257, pop. 25,564], lying entirely among the Southern Uplands, consists of the two valleys of the Yarrow and Ettrick, with the high ridge that separates them. Most of its surface is pastoral moorland, but the bottoms of the valleys are

cultivated. Ettrick Pen [2269 feet], on the southern margin of the county, is a conspicuous landmark. The county town, Selkirk, and Galashiels on the Gala Water, are important seats of the woollen industry, and the cloths which they weave are known as "tweeds," from the river on which and on whose tributaries so many spinning mills are situated.

ROXBURGHSHIRE [area 665, pop. 53,442] comprises all the rich undulating lowland which lies between the River Tweed and the crest of the Cheviot Hills. These uplands and their continuation westwards between the head-waters of the Teviot and Liddel are green pastoral tracts famous for their breed of sheep known as "Cheviots." The county crosses the Tweed and takes in a strip of hilly ground between the Gala and Leader Waters, as well as a portion of the fertile plain of the Merse. It also extends southward so as to include the upper part of the basin of the Liddel. It is wholly pastoral and agricultural. The county town, Jedburgh, has a fine old abbey church and woollen mills. Hawick, its most populous town, is one of the chief centres in Scotland for woollen manufactures. Part of the town of Galashiels is in this county. Kelso, beautifully placed on the Tweed, has the ruins of a noble abbey, and another famous ruined abbey stands on the Tweed at Melrose, near the foot of the conical Eildon Hills.

BERWICKSHIRE [area 460, pop. 35,392] consists of a hilly district which rises into the long moory uplands of the Lammermuir Hills and a lowland which comprises most of the wide fertile plain of the Merse. Sheep-rearing among the hills, farming on the low grounds, and fishing on the coast are the staple

industries. There are hardly any manufactures. The county town, Greenlaw, is much less in size and population than Duns, which forms the centre of a wide agricultural district. Eyemouth is an important fishing station. Dryburgh Abbey, a ruin on the Tweed, contains the tomb of Sir Walter Scott.

RENFREWSHIRE [area 244, pop. 263,374] consists of a broad plain on the south side of the Clyde and of a range of bare hills which form its south-western boundary. This range is interrupted by two transverse valleys, that of Lochwinnoch and that of Barrhill, each of which affords a passage for a high road and railway from the Clyde basin into Ayrshire. The lower grounds abound in coal and ironstone. Besides mining, the chief industries are manufactures and shipbuilding. Paisley, a large town with upwards of 55,000 inhabitants, has factories for cotton, wool, silk, muslin, and shawls. Greenock and Port-Glasgow are great shipbuilding ports.

LANARKSHIRE [area 881, pop. 904,412] comprises the great basin of the River Clyde. Its southern part is high moorland, which stretches to the north-west by Cairn Table [1693 feet] and the Haughshaw Hills to the borders of Renfrewshire. On the eastern side also, a region of bleak moors forms the boundary of most of the county. The wide hollow traversed by the River Clyde from Symington to Glasgow is a fertile well-cultivated district with much fine river scenery, especially in the ravines of the Clyde and the Mouse Water. Agriculture and sheep-rearing in the upper part of the county and mining and manufactures in the lower are the chief industries. The southern moorland tracts form the

Upper Ward of the county ; the fertile valley below Lanark is included in the Middle Ward ; while the tract to the north forms the Lower Ward. Glasgow, the second city of the British Empire, contained a population at the last census of 674,000, which must now be considerably larger. It is one of the chief manufacturing centres in the country, standing on the great Clyde coal-field, and with abundant supplies of coal and iron. It is a great trading and shipbuilding port, and with extensive docks and warehouses. It possesses a famous University and the only old cathedral in Scotland which still remains entire. Lanarkshire contains numerous populous towns, especially in or near the mining districts, such as Hamilton, Airdrie, Coatbridge, Rutherglen, Wishaw, and Motherwell. Lanark, the old county town, stands near the Falls of Clyd

BUTESHIRE [area 217, pop. 17,657] is an insular county comprising the islands of Bute, Arran, the Cumbraes, Holy Isle, Inchmarnock, and Pladda. Bute is hilly in the northern half, undulating low ground in the southern half, for the line between the Highlands and Lowlands passes across the middle of it. Its chief town, Rothesay, is one of the largest watering-places on the Firth of Clyde. Arran has a fine group of granite hills [2874 feet] in the north and high rolling moorlands in the south. It contains no towns, but its straggling villages are much frequented for summer quarters. The Cumbrae Islands, which take their name from the Cymry of the ancient kingdom of Strathclyde, are low, fertile, and grassy, with some fine rocky shores.

AYRSHIRE [area 1128, pop. 217,519] has high ground round its inland borders, and slopes thence

gently down to the Firth of Clyde. The southern portion, consisting chiefly of a part of the Southern Uplands, forms the old district of Carrick. Its central and most fertile district is called Kyle, while the northern tract rising into the moorlands that border Renfrewshire is known as Cunningham. A large part of the low grounds of the county lies upon a valuable coal-field, from which coal and ironstone are extensively obtained. Agricultural and dairy farming are successfully prosecuted. Ayr, the county town, and centre of a wide agricultural district, has a little shipping trade. It contains the tomb of the poet Burns. Kilmarnock is a centre for manufactures and mining. Ardrossan and Troon are ports for the export of coal.

WIGTONSHIRE [area 485, pop. 38,611], the most southerly county of Scotland, comprises the southwestern end of the Southern Uplands. These heights descend in broad, bare moorlands to the low grounds skirting the sea. Most of the county is devoted to pasturing sheep and cattle, and cheese-making is now a considerable industry in this county and Kirkcudbrightshire. The long sea-inlet of Loch Ryan has the little port of Stranraer at its upper end, whence a line of steamers sails to the north of Ireland. The harbour of Portpatrick, built at great cost, has been almost destroyed by the sea, and is practically useless. The county town, Wigton, is an agricultural centre at the head of Wigton Bay. This county and Kirkcudbrightshire form the district known as GALLOWAY.

KIRKCUDBRIGHTSHIRE [area 897, pop. 42,127, pronounced Kirkcoobry, that is, "the Kirk of St. Cuthbert"], embracing the wildest and highest part of the Southern Uplands, is also known as the "Stewartry

of Kirkcudbright." The loftiest summit, Merrick, which reaches a height of 2764 feet above the sea, stands in the midst of a desolate region of moors, mosses, craggy hills, and lonely lakes, more like Highland scenery than any other part of southern Scotland. The lower grounds sloping to the sea are fertile and cultivated. The chief towns are Kirkcudbright, the capital, Castle Douglas, Dalbeattie, with large granite quarries, and Maxwelltown, which is practically a suburb of the town of Dumfries.

DUMFRIESSHIRE [area 1062, pop. 76,140] has an upland region in the north, whence the ground declines gently towards the Solway Firth. It is traversed by the two great and fertile valleys of the Nith (Nithsdale) and the Annan (Annandale). The chief industries are sheep-rearing among the hills and agriculture on the lower grounds; but manufactures are carried on in the south and mining in the north. Dumfries, the county town, and Annan are centres in a wide agricultural district, and each is also a sea-port. Langholm is noted for the manufacture of "tweeds." Sanquhar has coal-mines; Moffat, mineral wells; Wanlockhead, lead-mines.

IV.—IRELAND

The old Celtic name of this island, Erin, became in Greek, Iern-e, in Latin, Hibern-ia, and in English, Ire-land. The country was also called "Scotia" from the Scots already referred to. As may be seen on the map, Ireland forms a rude parallelogram, the longer axis of which running north-north-east and south-south-west is about 300 miles in length, the average breadth of the island being about 150 miles.

The total area embraced by Ireland is 32,531 square miles, of which about a fourth part is waste land, bog, and water.

Surface.—The best idea of the physical features of Ireland is obtained if we regard the island as composed of a wide central plain surrounded by a broken belt of high grounds. This belt is broadest and most continuous in the south. It begins close to Dublin, and runs through the southern counties to the far headlands of Kerry. Among its more conspicuous heights are the Wicklow Mountains [2473 feet], Mount Leinster in Wexford [2610], Slievenaman [2364] in Tipperary, Knockmealdown Mountains [2609] in Waterford, and the ranges of hills that run westward through Cork and Kerry into Macgillivuddy's Reeks [3414], the highest summit in Ireland. The western fringe of high ground is less lofty and continuous. It is cut through by the three great depressions of the Shannon, Galway Bay, and Clew Bay; but in the west of Clare it ascends to nearly 1300 feet, in the west of Galway to more than 2200 feet, and in Mayo to more than 2300 feet. Interrupted by the great hollow of Donegal Bay, it begins again with the stupendous precipices of Slieve League [1972], on the north side of that bay, and runs as an almost continuous range of high ground to Lough Swilly and Malin Head. To the east of Lough Foyle another belt of high ground sweeps through Londonderry and Antrim to Belfast Lough. The eastern side of the island is lower and more open than the others—a conspicuous advantage for traffic with the sister island of Great Britain and with the rest of Europe. South of the fine group of the Mourne Mountains [2796], and the range of Slieve

Gullion [1893], to the west of Carlingford Lough, there is no high ground until the Wicklow Mountains already referred to.

It must not be supposed, however, that inside this outer frame of hills the whole of the country is one level plain. Most of the interior is low undulating limestone ground with occasional ridges of hills, such as the ranges to the north [Bernagh Mountains, 1746 feet] and east [Silvermine Mountains, 2278 feet] of the town of Limerick. The widest space of low ground lies partly in the broad central plain watered by the Shannon, much of which is still covered with morasses, forming the great Bog of Allen, and partly in the depression between Killala Bay and the head of Galway Bay occupied by a chain of lakes. The surface of Lough Mask is only 64 feet above the sea, and that of Lough Conn 41 feet.

Coast-line.—The coast-line of Ireland corresponds in character with the grouping of the rocks of the island. Along the western side, facing the stormy Atlantic, it is cleft by many inlets of the sea, projects in bold rocky headlands, and is fringed with hundreds of islets that have in course of time been detached from the mainland by the action of the breakers. The finest sea-walls in the British Islands are those of Achill Island, which rise more than 2000 feet sheer out of the ocean. Those of Slieve League in Donegal are less vertical and not quite so lofty. But the whole western coast presents an array of cliff scenery which for variety and grandeur is unrivalled in Europe. The long arms of the sea which so deeply indent that coast run in a general east-north-east and west-south-west direction, and, like those of the west of Scotland, have had their

trend given to them by the way in which the rocks have there been arranged in parallel bands.

On the south coast the hard sandstone rocks project in headlands such as Cape Clear, Head of Kinsale and Mine Head, while the sea runs inland in a number of fine natural harbours, such as those of Kinsale, Cork, Youghal and Waterford. The eastern coast, beginning with the granite headland of Carnsore Point, is much less rocky and indented than the western, resembling in this respect the eastern coast of Britain. It presents bold cliffs at Wicklow Head, Brae Head, and Howth, and retires into bays at Wexford, Dublin, and Dundalk. It has four sea-lochs like those of Scotland—those of Carlingford, Strangford, Belfast, and Larne. The northern coast-line is distinguished by the great precipice of Fair Head, which looks across to Rathlin Island and the coast of Scotland, and by the wonderful range of columnar cliffs at the Giant's Causeway. It is indented by Lough Foyle, and terminates in the storm-swept cliffs of Malin Head. Probably no part of Ireland is more than about 50 miles from the sea.

Drainage.—The water-shed of Ireland differs from that of Great Britain in this important respect, that it lies much nearer to the eastern than to the western coast. Beginning in the north at Fair Head, it runs along the plateau of Antrim, curves round between Lough Neagh and Belfast Lough, strikes south-eastward to the crests of the Mourne Mountains, within 4 miles of the sea, and then sweeping south-westwards between the head-waters of the Bann and the Boyne, crosses the great central plain, runs up over the Slieve Bloom and the Devil's Bit ridges, descends again into the plain of Tipperary, whence,

after mounting over the western end of the Galty range, it turns westward, sweeps into Kerry round the upper part of the basin of the Blackwater, and then crosses southward to Bantry Bay. Thus by much the largest part of the drainage goes westward into the Atlantic.

Of the **western rivers** the chief is the Shannon [area 6946, length 225]. This stream rises on the flanks of Cuilcagh in County Cavan, and flows southward across the great plain through a succession of lakes. The flatness of the centre of Ireland is well shown by the fact that at a distance of 200 miles from its mouth the Shannon is only 160 feet above the sea-level, giving a fall of only 9·6 inches in a mile. The river is navigable for 214 miles. The other streams on the west side of the water-shed, though numerous, are comparatively small in size. The Erne drains an area of 1550 square miles; Lough Corrib, 1160; and the Moy, 808. On the northern coast the Foyle has a basin of 1100 square miles; the Bann-rising in the Mourne Mountains, and flowing into Lough Neagh, intercepts and carries to the sea at Coleraine the drainage of 2345 square miles. Of the **eastern rivers** the chief are the Boyne [area 1002, length 80], Liffey [area 476, length 50], Slaney [area 734, length 60], Barrow [area 3410, length about 100], Blackwater [area 1165, length about 100], and Lee [area 595, length 50]. Some of these streams, particularly the Blackwater, flow through scenery of great beauty.

The flatness of the central plain has led to the accumulation of the drainage in hundreds of hollows forming lakes. The largest lake is Lough Neagh, which covers an area of about 153 square miles. More picturesque are the western lakes Erne, Conn,

Mask, Corrib, and others. The lakes of the Shannon are expansions of the slow-moving waters of that river. The famous Lakes of Killarney lie among the finest scenery and loftiest mountains in Ireland. Another consequence of the flatness of the island has been the facility for constructing a network of canals, by which communication is opened up from river-basin to river-basin across the whole breadth of the country.

Mineral Fields.—Ireland possesses several small coal-fields, but the coal is neither so plentiful nor of such good quality as in England and Scotland. Veins and beds of iron have been mined in different parts of the country ; and copper, lead, and zinc, with other metals also occur. Rock-salt is found in the north-east. Many beautiful marbles exist. But the mineral resources of Ireland have never yet been adequately developed.

Population and Subdivisions.—The same short dark curly-haired Iberian people who preceded the Celts in England also inhabited Ireland. They were called Firbolg by the Celts who came into the island and conquered them, and they are probably still to be recognised in the population of Ireland, particularly among the swarthy, diminutive people of some of the western districts. The Celts belonged to the Gaelic division of that great race, and form now the larger part of the population of Ireland. They have retained their language, which is still spoken by more than 800,000 of the inhabitants, but they almost all understand English, only about twelve in every thousand of them knowing Irish only. In the east and north-east of the country there is a large intermixture of English and Scottish blood.

At the last census (1881) there were in Ireland 5,174,836 inhabitants, of whom 2,533,277 were males and 2,641,559 females. The proportion between area of surface and population is thus nearly 160 persons to every square mile—a ratio not half as great as that of England. Owing to constant emigration the number of inhabitants in Ireland has for more than forty years been gradually diminishing, the population at present being actually 3,000,000 less than it was in 1841. The most thickly-peopled district is the north-eastern (Ulster), and the most sparsely-peopled is the western (Connaught).

Ireland is divided into four provinces and thirty-two counties. The provinces Leinster, Munster, Connaught and Ulster, correspond in a general way with ancient Irish kingdoms before the country was conquered by the English, who subdivided the provinces into the counties as now arranged.

The province of **Leinster** occupies the eastern part of Ireland from Carlingford Lough to Waterford Harbour, and includes twelve counties, covering a total area of 7620 square miles. These counties are the following:—

DUBLIN [area 354, pop. 418,910] is mostly a fertile plain bordering the Irish Sea, but along its southern edge it rises into hilly ground, the crest of which exceeds 2400 feet. Fishing is prosecuted in Dublin Bay, and there are numerous manufactures. Dublin, the capital of Ireland, with about a quarter of a million of inhabitants, stands at the mouth of the Liffey, which forms its natural harbour. It is the seat of the Protestant and Catholic archbishops of Ireland, of the law courts, and of the oldest University in Ireland, called Trinity College. It is

the chief centre of the home and foreign trade of Ireland; but a large part of its commerce goes through Kingston, where there is a capacious sheltered harbour.

MEATH [area 906, pop. 87,469] is a portion of the great Irish plain, watered by the river Boyne. It formed before the English conquest the estate of the chief king of Ireland, whose residence was at Tara. Near to Trim, the county town, the great Duke of Wellington was born. Kells is noted for one of those singular "round towers" so frequent in Ireland.

WESTMEATH [area 708, pop. 71,798] is a level gently-undulating pastoral country lying on limestone, dotted with lakes, and sending its drainage westwards into the Shannon. Its county town, Mullingar, is an important centre for a wide agricultural district. Athlone, partly in this county, is a military centre, and carries on trade with Limerick by steamers down the Shannon, and with Dublin by canal and railway.

LONGFORD [area 420, pop. 61,009] also lies on the central limestone plain, and slopes gently towards the Shannon on its western border. Its fertile soil furnishes good pasture. Its county town, Longford, has a Catholic cathedral.

LOUTH [area 315, pop. 77,684], the smallest Irish county, runs as a strip along the Irish Sea from the mouth of the Boyne to the head of Carlingford Lough. Most of its surface is low and fertile, but between Dundalk and Carlingford Lough it rises into a group of picturesque granite hills [1935 feet]. It has good farms, fisheries, hill-pastures, and linen-mills. The important town of Dundalk is its county town,

with a harbour. Drogheda is a flourishing seaport with various manufactures.

KING'S COUNTY [area 771, pop. 72,852] rises along its southern border into the Slieve Bloom Mountains [1733 feet] but the ground falls thence northward into the great limestone plain. The lowland is fertile, except where crossed by a portion of the great morass known as the Bog of Allen. Tullamore, on the Grand Canal, is the county town. On the western border is Parsonstown, and farther north, on the Shannon, is the interesting group of ancient ruined churches, round towers, and beautifully-sculptured crosses of Clonmacnoise.

QUEEN'S COUNTY [area 663, pop. 73,124] has the southern declivities of the Slieve Bloom Mountains along its north-western border, and rises in the south-east into the uplands that overlie the Leinster coal-fields, the intervening area being low limestone ground, partly fertile and partly covered with bogs. Its towns are Maryborough, Mountmellick, and Portarlington.

KILDARE [area 685, pop. 75,804], a fertile tract of flat land, which includes portions of the basins of the Barrow and the Liffey. The Curragh is a level tract, carpeted with rich turf, where a military camp and race-course are established. Kildare, once an important cathedral city, is now a mere village. The county town, Athy, stands on the Barrow. At Maynooth a college is supported by the State for the education of Roman Catholic priests. The county has a number of fine round towers, sculptured crosses, and ruined castles.

WICKLOW [area 781, pop. 70,386], unlike the other counties of the province, is mostly hilly,

traversed along its entire length by a great granite ridge which rises into the heights of Lugnaquilla [3039 feet], Douce Mountain [2384], and Kippure Mountain [2473], throwing off the Liffey on the west side, and the Avonmore and other streams on the east. Much of the coast-line is precipitous. Wicklow, the county town, stands at the north side of a high projecting mass of land, and Arklow at the south side of it. The Vale of Ovoca, which conducts the Avonmore River to the sea, is celebrated for its scenery and its mines of copper, iron, etc. Bray is a favourite watering-place. To the west of this valley lie the Seven Churches—a series of interesting ecclesiastical ruins.

KILKENNY [area 798, pop. 99,531] has a central depression traversed by the River Nore, and surrounded with an interrupted series of rising grounds. In the south a high ridge runs through the county, separating the basin of the Nore from that of the Suir. A portion of the Leinster coal-field comes into the county. There are round towers and other antiquities of interest. Kilkenny, the county town, is the largest inland town in Ireland.

CARLOW [area 345, pop. 46,568] lies almost wholly on the great band of granite, which striking south-westward out of Wicklow, sinks down into a level, gently-undulating tract. The county town, Carlow, stands on the navigable part of the Barrow.

WEXFORD [area 900, pop. 123,854] is low ground towards the sea, but rises inland into a series of high bare ridges, which, in Mount Leinster on the borders of Carlow, reach a height of 2610 feet. Agriculture is the chief industry, and fishing

is prosecuted on the coast. The county town, Wexford, is a seaport with an active export trade.

The Province of **Munster**, the most southerly and largest of the four provinces of Ireland, embraces the southern and south-western part of the island, from Waterford Harbour to Galway Bay, covers an area of 9480 square miles, and is divided into the following six counties :—

TIPPERARY [area 1658, pop. 199,612] consists of a portion of the great central limestone plain of Ireland, interrupted by a succession of lofty hill ranges. To the north-west lie the Arra Mountains [1517 feet] overlooking Lough Derg. Separated from these by the valley of Nenagh comes the long ridge of the Silvermine and Devil's Bit, rising in Keepe Hill to 2278 feet, and sinking southward beneath the wide and fertile plain on which the town of Tipperary stands. Beyond the plain towers the long, bare, bleak upland of the Galty Mountains [3015], which, after dropping under the plain of the Suir, is continued eastward by the range of Slievenaman [2364]. Another wide valley which descends into the Suir then intervenes, and immediately beyond it comes the imposing ridge of the Knockmealdown Mountains [2609]. The county thus includes fertile plains, wide tracts of level bog, and high bare hills. It possesses a small coal-field. Among the towns are Tipperary, Clonmel, Carrick-on-Suir, Thurles, and Cashel, the seat of a Roman Catholic Archbishopric.

WATERFORD [area 721, pop. 112,768] consists in great part of hilly ground disposed in long ridges, running in a general east and west direction, and rising into the Knockmealdown Mountains in the north-west and the Comeragh Mountains [2478] in the

north. Between some of these ridges lie deep and fertile valleys, such as that of Lismore ["great garden"] in which the Blackwater flows. The most striking valley in this county is that which the river follows from Cappoquin to the sea. The chief industries are agriculture and dairy farming, this being the principal district in Ireland for butter. The chief town, Waterford, is an important seaport, with a large export trade in Irish produce. Dungarvan is also a seaport.

CORK [area 2890, pop. 495,607], the most southerly and the largest of the Irish counties, consists of a series of parallel ridges and hollows which have a general trend towards east-north-east, and owe their origin to the disposition of the rocks in parallel bands. The coast-line makes this structure very clear. The inlets of Kenmare Bay, Bantry Bay, Dunmanus Bay, and Roaringwater Bay, are prolonged inland in valleys which lie upon softer shales and other rocks, while the long parallel peninsulas which separate these inlets and end seawards in headlands and rocky islands, are continued into the interior as high ridges and bare tracts of hilly moorland. The valleys are fertile and produce much butter. The county town, Cork, the most important town in the south of Ireland, has a fine natural harbour, and a large export trade. Queenstown, an island in Cork harbour, is the port at which mails from America for England are landed, to be conveyed overland to Dublin and thence by swift steamer to Holyhead. Other ports of less note have been established among the many fine inlets on the coast of this county, the chief being Kinsale, Youghal, and Bantry. Inland are Bandon, Mallow, and Fermoy.

KERRY [area 1852, pop. 201,039], the most

mountainous, and, on the whole, most picturesque county of Ireland. It includes Macgillicuddy's Reeks and other groups of hills, ranging up to more than 3000 feet in height, the Lakes of Killarney, and a coast-line of almost unequalled variety and grandeur. Most of its surface is unproductive, though fertile tracts lie in the valley bottoms, and the moist mild climate is singularly favourable to vegetation. Some plants grow wild there which in other parts of the British Isles are only to be seen under artificial protection. Yet Kerry is one of the most backward counties of Ireland. It has only two towns—Tralee, a seaport with a small trade, and Killarney, which depends largely upon the numerous visitors to the lakes.

LIMERICK [area 1063, pop. 180,632] lies on a wide plain rising up in the north-east into the Slieve Felim Hills, in the south-east into the Galty range, and with high grounds along most of its southern margin. So fertile is the central part of this plain that it has been called the Golden Vale. Agriculture and stock-raising are the chief employments. Limerick, the county town, is a seaport with a good deal of trade.

CLARE [area 1293, pop. 141,457], occupying the district between the Shannon and Galway Bay, has a group of lofty hills along its eastern border, high moorlands towards the west, and a central, lower and more fertile tract dotted with lakes. The county town, Ennis, is a principal station on the railway from Limerick to Galway.

The Province of **Connaught** includes the region west of the Shannon from Lough Derg to Donegal Bay, covers an area of 6862 square miles, and is divided into the following five counties:—

GALWAY [area 2452, pop. 242,005], the largest Irish county after Cork, consists of two strongly-contrasted portions. The eastern and much the larger district is a part of the great limestone plain and is comparatively fertile, but rises in the south into the range of Slieve Aughty. The western district is wild and hilly. The boundary between the two is formed by the line of lakes extending northwards from the head of Galway Bay. The surface of Lough Corrib is only 28 feet above sea-level, and that of Lough Mask, 64 feet. Galway, the county town, is a seaport and railway terminus. Tuam is the seat of a Roman Catholic Archbishop. Ballinasloe is noted for its cattle market and wool fair.

MAYO [area 2126, pop. 245,212] is almost wholly wild hilly ground, some of its summits rising to more than 2000 feet. The great conical mass of Nephin [2646 feet] is a conspicuous landmark all over the west of Ireland. The south-eastern part of the county, however, is a level fertile tract lying on the limestone plain. The coast-line is singularly indented and island-fringed. The head of Clew Bay, with its extraordinary crowd of little limestone islands, is one of the most remarkable scenes on the British shores. Pasturage and fishing are the chief employments of the peasantry, who are less advanced than in most other parts of Ireland. The towns are Castlebar in the interior, Westport on Galway Bay, and Ballina, a port at the mouth of the Moy.

SLIGO [area 721, pop. 111,578] is chiefly low ground, but is traversed by the range of the Ox Mountains, and rises in the north into the ridge of Benbulbin [2113 feet], which presents a range of fine

precipices on three sides. Agriculture, stock-raising, and fishing are the main industries. Sligo, the chief town, is a small seaport at the head of the bay named after it.

ROSCOMMON [area 949, pop. 132,490], the only county of Connaught entirely inland, begins in the north on the east of the Curlew Mountains, and extends along the low plains on the west side of the Shannon. The county town, Roscommon, has the ruins of a fine castle and abbey.

LEITRIM [area 613, pop. 90,372] is an undulating county, rising into hills, one of which is nearly 2000 feet high, and sinking into plains which, for the most part, lie upon limestone. Pasturage is found almost everywhere. The county town, Carrick-on-Shannon, though so far inland, is only 130 feet above the sea.

The Province of **Ulster**, the most populous, thriving and wealthy district of Ireland, covers an area of 8569 square miles, and is divided into the following nine counties:—

DONEGAL [area 1870, pop. 206,035] is an undulating county, with wide tracts of lowland and rolling hills, but rising in the west into tracts of high bleak moorland. Erigal, its highest summit [2466 feet], is a fine conical hill which stands up as a prominent landmark. A large part of the area is covered with bogs not yet reclaimed. Agriculture is the chief employment; the fisheries might be advantageously prosecuted, but are neglected, as they so generally are along the coast of Ireland. Donegal is by much the least prosperous part of Ulster. Its county town, Lifford, stands on the Foyle at the extreme eastern edge of the county. Letterkenny is an important

market town. At Donegal on Donegal Bay are the remains of the monastery in which the famous "Annals of the Four Masters"—an ancient Irish historical manuscript—were written.

LONDONDERRY [area 816, pop. 164,991] has an irregular surface rising along the southern margin into the Sperrin Mountains [2240 feet], and falling to the plains of the Bann and the Foyle. In the north there is a conspicuous range of high ground, crowned with a line of precipice, which runs inland for some miles from the coast. While the chief industry is agriculture and cattle-raising, there are important manufactures in the northern part of the county. Londonderry, the capital, is a busy seaport and manufacturing town, which still preserves its old walls and the cannon on them that stood the famous "Siege of Derry." Coleraine is another important manufacturing centre with a seaport. Newtown Limavady, a third thriving town, stands on the Roe.

ANTRIM [area 1190, pop. 421,943], the chief manufacturing county of Ireland, and the most industrious and prosperous part of Ulster, consists of a high tableland which descends abruptly to the sea on the northern and eastern sides, and slopes into the valley of the Bann and Lough Neagh on the western. The highest summit on this plateau [1817 feet] overlooks the inlet of Red Bay. The cliffs of Fair Head, the remarkable assemblage of columnar basalts at Giant's Causeway, and the fine escarpments all the way from Red Bay to Belfast Lough, attract many visitors to this district. About two-thirds of the county are arable, part of this area being devoted to the growing of flax to supply the numerous linen-mills. Belfast, the second town in Ireland for size and popula-

tion, is the centre of the linen and cotton manufactures of the island, and an important seaport, with a large export and import trade. Ballymena and Antrim in the interior are also engaged in the linen trade. On the coast are the ports of Carrickfergus and Larne.

DOWN [area 856, pop. 272,107] is on the whole level and gently undulating, but it includes at its southern end the fine group of the Mourne Mountains in which Slieve Donard towers to the height of 2796 feet. This county shares in the great linen industry of the north-east of Ireland, much flax being cultivated and numerous mills being at work in the manufacture of textile fabrics. The sea-fishing is also important. The county town, Downpatrick, and Newtonards, at opposite ends of Strangford Lough, are also engaged in the weaving trade.

TYRONE [area 1260, pop. 197,719], an entirely inland and generally hilly county, rising up to the crest of the Sperrin Mountains on the north, and to the ridge of Slieve Beagh [1255 feet] on the south, and sinking eastwards to Lough Neagh, the surface of which is only 48 feet above the sea. The chief industry is agriculture, but the linen trade also employs a considerable part of the population. A small but valuable coal-field lies near the town of Dungannon. Omagh, the county town, stands in a level and comparatively fertile tract. Strabane is a busy town on the Foyle.

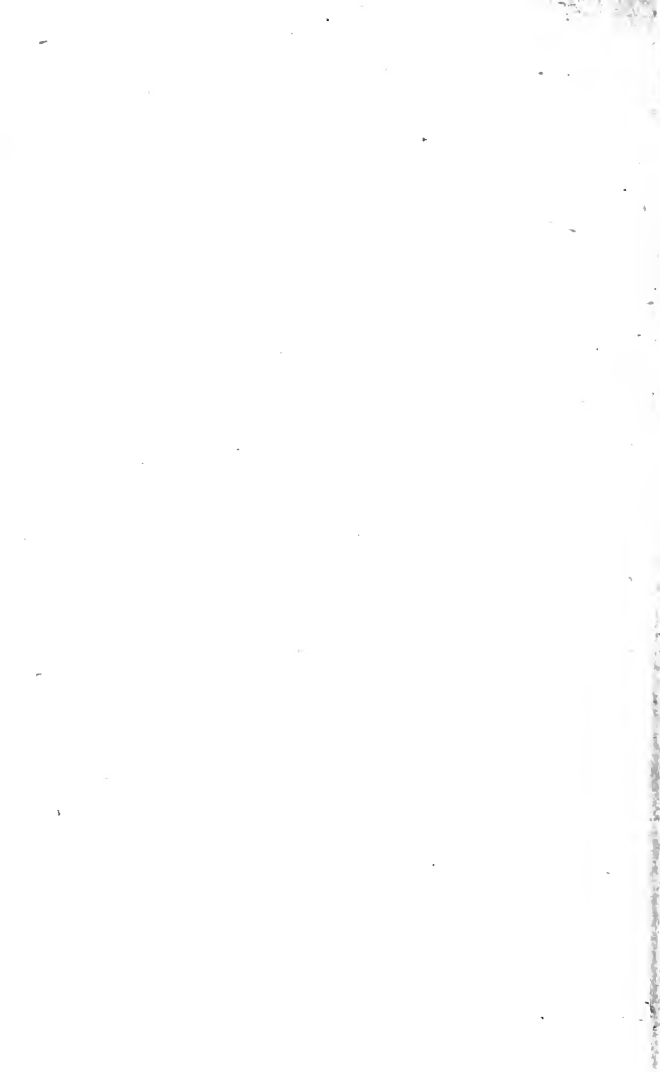
FERMANAGH [area 714, pop. 84,879], lying in a wide depression of the limestone plain, is cut in two by the intricate sheet of water called Lough Erne, whence it rises in the west into the high bare ridge of Cuilcagh [2188 feet], and in the east into the uplands of Carnmore [1034 feet]. Its county town, Enniskillen,

is built on an island in the river which connects the upper and lower Lough Erne.

CAVAN [area 745, pop. 129,476] is a long narrow county, of which the western end is high and bleak, while the rest is low and irregular in surface. Agriculture and flax-making are the chief industries. Cavan, the county town, stands in a comparatively fertile and cultivated tract.

MONAGHAN [area 499, pop. 102,748], in its northern portion, lies on an extension of the limestone plain, but undulates southwards into more hilly ground. Monaghan, its capital, and Clones stand at the edge of the limestone plain. Carrickmacross lies to the south-east.

ARMAGH [area 512, pop. 163,177], in its northern parts skirting Lough Neagh, is low and level. It then undulates gently towards the south, and in its extreme south-eastern limit rises into Slieve Gullion [1893 feet]. Agriculture is the chief industry. Apples are grown to a considerable extent for export, and flax is cultivated and prepared for the linen industry. Armagh, the capital, is the seat of both a Protestant and Catholic archbishop. Lurgan makes linen and muslin.



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