

mons and repair to Rome. The magnificence of a triumph and the idle honours of a consulship had little attraction for a general in mid-career of conquest, and a man of singularly simple habits and no political ambition. The enthusiasm with which he was welcomed, not only by the populace, which went in crowds to meet him as far as the twentieth milestone, but by the emperor's own prætorians, warned Tiberius that it might be equally dangerous to keep so popular a favourite at Rome, and the earliest pretext was seized to remove him from the capital. The recent death of Archelaus, king of Cappadocia, and a disputed succession in Parthia and Armenia, afforded a sufficient plea for Roman interference; and, a few months after his return, Germanicus was despatched to the East with extraordinary powers, and started on his mission without waiting to enter on his consulship. At the same time Tiberius took the further precaution of superseding Silanus, a connexion of Germanicus, in the government of Syria, and appointing in his stead one of the most violent and ambitious of the old nobility, Cneius Calpurnius Piso, in order to watch his nephew's movements, and if necessary to check his ambition. Germanicus proceeded by easy stages to his province, halting on his way in Dalmatia, where he conferred with Drusus, his brother by adoption, and visiting the battlefield of Actium, Athens, Ilium, and other places of historic interest. At Rhodes he met for the first time his coadjutor Piso, who had followed in his wake, and was seeking everywhere to thwart his policy and asperse his character. When at last he reached his destination, he found little difficulty in effecting the settlement of the disturbed provinces, notwithstanding the violent and persistent opposition of Piso. At Artaxata Zeno, the popular candidate for the throne, was crowned king of Armenia; to the provinces of Cappadocia and Commagena Roman governors were assigned; and Parthia was conciliated by the banishment of the dethroned king Vonones. After wintering in Syria Germanicus started next year for a tour in Egypt. The chief motive for his journey was love of travel and antiquarian study, and it seems never to have occurred to him, till he was warned by Tiberius, that he was thereby transgressing an unwritten law of the empire forbidding any Roman of rank to set foot in Egypt without express permission. On his return to Syria he found that all his arrangements had been upset by Piso. Violent recriminations followed, the result of which, it would seem, was a promise on the part of Piso to quit the province. But at this juncture Germanicus fell ill. Piso deferred his departure, and, when at length compelled to start, lingered in the neighbourhood of Syria, receiving with open exultation the bulletins which told of the prince's rapid decline. Germanicus on his side was fully convinced that he had fallen a victim to the arts of his unscrupulous enemy. He knew that he was dying, and believed that he was dying of poison. Even his gentle nature was stung to madness at the thought, and with his dying words he called on his friends and family to denounce his murderer and avenge his death. Whether these suspicions were true must remain an open question, yet the arguments in favour of a death from natural causes seem to preponderate. It is true that Piso desired his death, and, from what we know of their characters, neither he nor his wife Plancina were likely to stick at any means for procuring it. But a poisoner does not generally let his wishes be publicly known, nor show his exultation when they are attained. The evidence from the appearance of the corpse is still more uncertain. Suetonius indeed avouches that there were livid marks all over the body and foam at the mouth; but he adds as a further proof of poison that on the funeral pyre the heart remained unconsumed, which clearly shows that he was only retailing the vulgar gossip. Tacitus, though inclined to believe the worst of Piso, allows that the

report of the symptoms varied with the prepossession of the observers.

The sad tidings of his death cast a gloom over the whole Roman empire. To the provincials he had endeared himself by his simple manners, his affability, his generosity, his justice. The legions mourned their comrade who had always stood their friend at need, their general who had never known a defeat. At Rome there was a universal outburst of sorrow and indignation. The natural grief at the loss of a favourite prince was aggravated by the suspicion of foul play, and by hatred of the emperor who was at least guilty of recklessly exposing him to danger, and who now sullenly refused to join the general mourning. Men recalled the forboding words which had been whispered at his departure, "Whom the plebs love, die young." Nor was he unworthy of this passionate devotion. He had wiped out a great national disgrace; he had quelled their most formidable foe; he had pacified distant provinces; and in his high estate he had so borne himself that all save one man had loved and honoured him. His private life had been stainless, and he possessed in a singular degree the gift of personal attractiveness. And yet an impartial biographer must add that for his fair fame his death was opportune. There were elements of weakness in his character which his short life only half revealed: an almost feminine impetuosity which made him twice threaten to take his own life; a superstitious vein which impelled him to consult oracles and shrink from bad omens; an amiable dilétantism which led him to travel in Egypt while his enemy was plotting his ruin; a want of nerve and resolution which prevented him from coming to an open rupture with Piso till it was too late. His very virtues, his elegant taste, his chivalrous sense of honour, his unsuspecting openness and candour, unfitted him for the stern times in which he lived. He was as little fitted to play the part of Augustus as that of Alexander, to whom Tacitus fondly compares him; and had he lived to succeed to the purple the historian might have been compelled to pronounce on him the epitaph of Galba, that all would have thought him fit to reign if he had not reigned. (F. S.)

GERMAN SILVER, or NICKEL SILVER, known also under the names of White Copper and Packfong, is an alloy of copper, nickel, and zinc, prepared either by melting the copper and nickel together in a crucible, and adding piece by piece the previously heated zinc, or by heating the finely divided metals under a layer of charcoal, by means of an air furnace of strong draught, and promoting the thorough solution of the nickel by stirring. To destroy its crystalline structure, and so render it fit for working, it is heated to dull redness, and then allowed to cool. German silver is harder than silver; it resembles that metal in colour, but is of a greyer tinge. Exposed to the air it tarnishes slightly yellow, and with vinegar affords a crust of verdigris. At a bright red heat it melts, and with access of the atmosphere loses its zinc by oxidation. At a heat above dull redness it becomes exceedingly brittle. German silver is much used in the arts. For the manufacture of imitation silver for knives and forks its composition is—nickel and zinc of each 2 parts, and copper 4 parts; for handles of spoons and forks the proportion of copper in this formula is increased by 1. For rolling, the most suitable alloy is copper 3 parts, zinc 1, nickel 1. Candlesticks, bells, spurs, and other cast articles are made of a German silver containing 2 or 3 per cent. of lead. The addition of 2 to 2½ per cent. of iron, which must first be melted with part of the copper, makes an alloy which is whiter, but also more brittle and harder than ordinary German silver.

See COPPER, vol. vi. p. 351, and Watts, *Dict. of Chem.* ii. p. 51. On the electrical conductive capacity of German silver, see ELECTRICITY, vol. viii. p. 63.

GERMANY

PART I.—GEOGRAPHY AND STATISTICS.

GERMANY occupies the greater portion of central Europe, and has but few lines of natural boundary. If by the designation Germany is meant the territory inhabited by Germans, this is considerably larger than the German empire constituted in 1871, the former having an area of about 340,000, and the latter of 208,000 English square miles. The present German empire extends from 47° 16' to 55° 53' N. lat., and from 5° 52' to 22° 52' E. long. The eastern provinces project so far that the extent of the German territory is much greater from S.W. to N.E. than in any other direction. Tilsit is 815 miles from Metz, whereas Hadersleben, in Schleswig, is only 540 miles from the Lake of Constance. The difference in time between the eastern and western points is 1 hour and 8 minutes. The empire is bounded on the S.W. and S. by Austria and Switzerland (for 1170 miles), on the S.W. by France (275 miles), on the W. by Luxembourg, Belgium, and Holland (together 512 miles). The length of German coast on the North Sea or German Ocean is 300 miles, and on the Baltic 830 miles, the intervening land boundary on the north of Schleswig being only 53 miles. The eastern boundary is Russia (725 miles).

The total area of the empire, including rivers and lakes but not the "haffs" or lagoons on the Baltic, is 208,427 English square miles,¹ which is about the 18th part of Europe, the 250th part of the whole dry land, and the 853d part of the whole surface of the globe.

PHYSICAL FEATURES.

Coast and Islands.—The length of the coast-line is scarcely the third part of the whole frontier, so that the Germans must be regarded as less a maritime than an inland people. Unlike the eastern states of Europe, the German empire has not only an inland sea-shore, but is also in direct communication with the great oceans by means of the North Sea. The coasts of Germany are shallow, and deficient in natural ports, except on the east of Schleswig-Holstein, where wide bays encroach upon the land, giving access to the largest vessels, so that a great harbour for men-of-war has been constructed at Kiel. With the exception of those on the east coast of Schleswig-Holstein, all the important trading ports of Germany are river ports, such as Emden, Bremen, Hamburg, Lübeck, Stettin, Dantzig, Königsberg, Memel. A great difference, however, is to be remarked between the coasts of the North Sea and those of the Baltic. On the former, where the sea has broken up the ranges of dunes formed in bygone times, and divided them into separate islands, the mainland has to be protected by massive dikes, while the Frisian Islands are being gradually washed away by the waters. On the coast of East Friesland there are now only seven of these islands; of which Norderney, a bathing-place, is best known, while of the North Frisian Islands, on the western coast of Schleswig, Sylt is the most considerable. Besides the ordinary waste of the shores, there have been extensive inundations by the sea within the historic period, the gulf of the Dollart having been so caused in the year 1276. Sands surround the whole coast of the North Sea to such an extent that the entrance to the ports is not practicable without the aid of pilots. Heligoland, which has belonged to England since 1814, is a rocky island, but it also has been

¹ 1 English square mile = 2.5898945 square kilometres, or 0.0470352 German square mile; 1 German square mile = 21.26087 English square miles; 1 sq. kilometre = 0.3861161 English square mile.

considerably reduced by the sea. The tides rise to the height of 12 or 13 feet in the Jahde Bay and at Bremerhafen, and 6 or 7 feet at Hamburg. The coast of the Baltic on the other hand possesses few islands, the chief being Alsen and Fehmern off the coast of Schleswig-Holstein, and Rügen off Pomerania. It has no extensive sands, though on the whole very flat. The Baltic has no perceptible tides; and a great part of its coast-line is in winter covered with ice, which also so blocks up the harbours that navigation is interrupted for several months every year. Its three haffs fronting the mouths of the large rivers must be regarded as lagoons or extensions of the river beds, not as bays. The Oder Haff is separated from the sea by two islands, so that the river flows out by three mouths, the middle one (Swine) being the most considerable. The Frische Haff is formed by the Nogat, a branch of the Vistula, and by the Pregel, and communicates with the sea by means of the Pillau Tief. The Kurische Haff receives the Memel, called Niemen in Russia, and has its outlet in the extreme north at Memel. Long narrow alluvial strips called *Nehrungen*, lie between the last two haffs and the Baltic. The Baltic coast is further marked by large indentations, the Gulf of Lübeck, that of Pomerania, east of Rügen, and the semicircular Bay of Dantzig between the promontories of Rixhöft and Brüsterort. The German coasts are now well provided with lighthouses.

Surface and Geology.—In respect of physical structure Germany is divided into two entirely distinct portions, which bear to one another a ratio of about 3 to 4. The northern and larger part may be described as a uniform plain, covered generally by very recent deposits, but with small areas of Tertiary and Secondary formations protruding here and there. South and Central Germany, on the other hand, is very much diversified in scenery and in geological structure. It possesses large plateaus, such as that of Bavaria, which stretches away from the foot of the Alps, fertile low plains like that intersected by the Rhine, mountain chains, and isolated groups of mountains, comparatively low in height, and so situated as not seriously to interfere with communication either by road or by railway. Its geological structure corresponds to this diversity of surface. The most ancient rocks of Germany are the gneisses, schists, and granites which form the Bohemian and Bavarian plateau, and extend into Saxony. Another isolated mass of similar rocks rising into the heights of the Vosges and Black Forest has been cut through by the valley of the Rhine. Silurian rocks are but scantily developed in Germany. The Devonian system, however, occupies an extensive area, since it forms the high tableland of the Taunus, Hunsrück, and Eifel, which ranges westward into Belgium. Carboniferous rocks with productive coal-fields cover isolated areas, chiefly in north-western Germany, particularly in Westphalia, at Saarbrück, in Saxony, and in Upper and Lower Silesia (see COAL). Between the Devonian uplands of the Taunus and the crystalline rocks of Bavaria a vast area of western Germany is occupied by the Triassic system, which ranges from Hanover to Basel and from near Metz to Baireuth. The southern half of this vast Triassic basin is bordered by a belt of overlying Jurassic rocks which skirt the Danubian plain in Würtemberg and Bavaria. Cretaceous rocks occur chiefly in north Germany in scattered patches flanking older formations. They evidently underlie the great plain, since they are found rising up here and there to the surface between Westphalia and

Denmark. Older Tertiary formations are absent from Germany, save the portion of the Eocene Alps included within the territory of Bavaria. But Miocene deposits extend into numerous detached basins, including those of the Rhine below Bonn, and at Mainz, the country round Magdeburg, and the plains of Bavaria. These strata contain valuable seams of lignite. The vast plains of northern Germany are covered with glacial drift, which rises to heights of 1400 feet above the sea along the edges of the flanking hills. Igneous rocks of different ages have been erupted in many districts, and further diversify the geology. The best known are the Tertiary and post-Tertiary lavas and cones of the Eifel and Siebengebirge; others of more ancient date occur along the southern slopes of the Harz.

Mountains and Plateaus.—Bavaria is the only division of the country that includes within it any part of the Alps, the Austro-Bavarian frontier running along the ridge of the Northern Tyrolean or Bavarian Alps. The loftiest peak of this group, the Zugspitze (57 miles south of Munich), is 9702 feet in height, being the highest summit in the empire. The Upper German plain sloping northwards from the Bavarian Alps is watered by the Lech, the Isar, and the Inn, tributaries of the Danube, all three rising beyond the limits of German territory. This plain is separated on the west from the Swiss plain by the Lake of Constance (Bodensee, 1306 feet above sea-level), and on the east from the undulating grounds of Austria by the Inn. The average height of the plain may be estimated at about 1800 feet, the valley of the Danube on its north border being from 1540 feet (at Ulm) to 920 feet (at Passau). The plain is not very fertile. In the upper part of the plain, towards the Alps, there are several lakes, the largest being the Ammersee, the Würmsee or Starnberg Lake, and the Chiemsee. Many portions of the plain are covered by moors and swamps of large extent, there called *Moose*. The left or northern bank of the Danube, from Regensburg (Ratisbon) downwards presents a series of granitic rocks called the Bavarian Forest (Bayerischer Wald), which must be regarded as a branch of the Bohemian Forest (Böhmischer Wald). The latter is a range of wooded heights on the frontier of Bavaria and Bohemia, occupying the least known and least frequented regions of Germany. The summits of the Bayerischer Wald rise to the height of about 4000 feet, and those of the Bohemian Forest to 4800 feet, Hoher Arber, about 49° N. lat., being 4842 feet. The valley of the Danube above Ratisbon is flanked by Jurassic plateaus sloping gently to the Danube, but precipitous towards the valley of the Neckar. The centre of this elevated tract is the Rauhe Alp, so named on account of the harshness of the climate. The plateau continuing to the north-east and then to the north, under the name of the Franconian Jura, is crossed by the valley of the winding Altmühl, and extends to the Main. To the west extensive undulating grounds or low plateaus occupy the area between the Main and the Neckar.

The south-western corner of the empire contains a series of better defined hill-ranges. Beginning with the Schwarzwald (Black Forest), we find its southern heights decline to the valley of the Rhine, above Basel, and to the Jura. The summits are rounded and covered with wood, the highest being the Feldberg (10 miles S.E. of Freiburg, 4902 feet). Northwards the Black Forest passes into the plateau of the Neckarbergland (average height, 1000 feet). The heights between the lower Neckar and the Main form the Odenwald (about 1700 feet); and the Spessart, which is watered by the Main on three sides, is nothing but a continuation of the Odenwald. West of this range of hills lies the valley of the upper Rhine, extending about 180 miles from south to north, and with a width of only 20 to 25 miles. In the upper

parts the Rhine is rapid, and therefore navigable with difficulty; this explains why the towns there are not along the banks of the river, but some 5 to 10 miles off. But from Speyer (Spire) town succeeds town as far down as Düsseldorf. The western boundary of this valley is formed in the first instance by the Vosges, where granite summits rise from under the surrounding red Triassic rocks (Sulzer Belchen, 4700 feet). To the south the range is not continuous with the Swiss Jura, the valley of the Rhine being connected here with the Rhone system by low ground known as the Gate of Mülhausen. The crest of the Vosges is pretty high and unbroken, the first convenient pass being near Zabern, which has been taken advantage of for the railway from Strasburg to Paris. On the northern side the Vosges are connected with the Haardt sandstone plateau (Kalmit, 2230 feet), which rises abruptly from the plain of the Rhine. The mountains south of Mainz (Mayence), which are mostly covered by vineyards, are lower, the Donnersberg, however, raising its head to 2262 feet. These hills are bordered on the west by the high plain of Lorraine and the coal-fields of Saarbrücken, the former being traversed by the river Moselle. The larger half of Lorraine belongs to France, but the German part possesses great mineral wealth in its rich layers of ironstone (siderite), and in the coal-fields of the Saar. The Devonian tract of the Hunsrück, Taunus, and Eifel is an extended plateau, divided into separate sections by the river valleys. Among these the Rhine valley from Bingen to Bonn, and that of the Moselle from Treves to Coblenz, are winding gorges excavated by the rivers. The Eifel presents a sterile, thinly-peopled plateau, covered by extensive moors in several places. It passes westwards imperceptibly into the Ardennes. The hills on the right bank of the Rhine also are in part of a like barren character, without wood; the Westerwald (about 2000 feet), which separates the valleys of the Sieg and Lahn, is particularly so. The northern and southern limits of the Niederrheinisches Gebirge present a striking contrast to the central region. In the south the declivities of the Taunus (2890 feet) are marked by the occurrence of mineral springs, as at Ems on the Lahn, Nauheim, Homburg, Soden, Wiesbaden, &c., and by the vineyards which produce the best Rhine wines. To the north of this Gebirge, on the other hand, lies the great coal basin of Westphalia (the largest in Germany). In the south of the hilly duchy of Hesse rise the isolated mountain groups of the Vogelsberg (2530 feet) and the Rhön (3117 feet), separated by the valley of the Fulda, which uniting further north with the Werra forms the Weser. To the east of Hesse lies Thuringia, a province consisting of the far-stretching wooded ridge of the Thüringer Wald (with three peaks of upwards of 3000 feet high), and an extensive elevated plain to the north. Its rivers are the Saale and Unstrut. This plateau is bounded on the north by the Harz, an isolated group of mountains, rich in minerals, with its highest elevation in the bare summit of the Brocken (3743 feet). To the west of the Harz a series of hilly tracts is comprised under the name of the Weser Mountains, out of which above Minden the river Weser bursts by the Porta Westphalica. A narrow ridge, the Teutoburger Wald (1300 feet), extends between the Weser and the Ems as far as the neighbourhood of Osnabrück. To the east the Thüringer Wald is connected by the plateau of the Frankenwald with the Fichtelgebirge. This group of mountains, occupying what may be regarded as ethnologically the centre of Germany, forms a hydrographical centre, whence the Nab flows southward to the Danube, the Main westward to the Rhine, the Eger eastward to the Elbe, and the Saale northward, also into the Elbe. In the north-east the Fichtelgebirge connects itself directly with the Erzgebirge, which forms the northern boundary of Bohemia.



The southern sides of this range are comparatively steep; on the north it slopes gently down to the plains of Leipsic, but is intersected by the deep valleys of the Elster and Mulde. Although by no means fertile, the Erzgebirge is very thickly peopled, as various branches of industry have taken root there in numerous small places. Around Zwickau there is a productive coal-field, and mining for metals is carried on near Freiberg. In the east a tableland of sandstone, called Saxon Switzerland, from the picturesque outlines into which it has been eroded, adjoins the Erzgebirge; one of its most notable features is the deep ravine by which the Elbe escapes from it. Numerous quarries, which supply the North German cities with stone for buildings and monuments, have been opened along the valley. The sandstone range of the Elbe unites in the east with the low Lusatian group, along the east of which runs the best road from northern Germany to Bohemia. Then comes a range of lesser hills clustering together to form the frontier between Silesia and Bohemia. The most western group is the Isergebirge, and the next the Riesengebirge, a narrow ridge of about 20 miles' length, with bare summits. Excluding the Alps, the Schneekoppe (5266 feet) is the highest peak in Germany; and the southern declivities of this range contain the sources of the Elbe. The hills north and north-east of it are termed the Silesian Mountains. Here one of the minor coal-fields gives employment to a population grouped round a number of comparatively small centres. One of the main roads into Bohemia (the pass of Landshut) runs along the eastern base of the Riesengebirge. Still farther to the east the mountains are grouped around the hollow of Glatz, whence the Neisse forces its way towards the north. This hollow is shut in on the east by the Sudetic group, in which the Altvater rises to almost 4900 feet. The eastern portion of the group, called the Gesenke, slopes gently away to the valley of the Oder, which affords an open route for the international traffic, like that through the Mülhausen Gate in Alsace. Geographers style this the Moravian Gate.

The North-German plain presents little variety, yet is not absolutely uniform. A row of low hills runs generally parallel to the mountain ranges already noticed, at a distance of 20 to 30 miles to the north. To these belongs the Upper Silesian coal-basin, which occupies a considerable area in south-eastern Silesia. North of the middle districts of the Elbe country the heights are called the Fläming hills. Westward lies as the last link of this series the Lüneburger Heide or Heath, between the Weser and Elbe, north of Hanover. A second tract, of moderate elevation, sweeps round the Baltic, without, however, approaching its shores. This plateau contains a considerable number of lakes, and is divided into three portions by the Vistula and the Oder. The most eastward is the so-called Prussian Seenplatte. Spirdingsee (430 feet above sea-level, and 46 square miles in area) and Mauersee are the largest lakes; they are situated in the centre of the plateau, and give rise to the Pregel. Some peaks near the Russian frontier attain to 1000 feet. The Pomeranian Seenplatte, between the Vistula and the Oder, extends from S.W. to N.E., its greatest elevation being in the neighbourhood of Dantzic (Thurmberg, 1096 feet). The Seenplatte of Mecklenburg, on the other hand, stretches from S.E. to N.W., and most of its lakes, of which the Müritsee is the largest, send their waters towards the Elbe. The finely wooded heights which surround the bays of the east coast of Holstein and Schleswig may be regarded as a continuation of these Baltic elevations. The lowest parts, therefore, of the North-German plain, excluding the sea-coasts, are the central districts from about 52° to 53° N. lat., where the Vistula, Netze, Warthe, Oder, Spree, and Havel form vast wampy lowlands (in German called *Brüche*), which, during

the last hundred years, have been considerably reduced by the construction of canals and by cultivation,—improvements due in large measure to Frederick the Great. The Spreewald, to the S.E. of Berlin, is one of the most remarkable districts of Germany. As the Spree divides itself there into innumerable branches, enclosing thickly wooded islands, boats form the only means of communication. West of Berlin the Havel widens into what are called the Havel lakes, to which the environs of Potsdam owe their charms. In general the soil of the North-German plain cannot be termed fertile, the cultivation nearly everywhere requiring severe and constant labour. Long stretches of ground are covered by moors, and there turf-cutting forms the principal occupation of the inhabitants. The greatest extent of moorland is found in the westernmost parts of the plain, in Oldenburg and East Frisia. The plain contains, however, a few districts of the utmost fertility, particularly the tracts on the central Elbe, and the marsh lands on the west coast of Holstein and the north coast of Hanover, Oldenburg, and East Frisia, which, within the last two centuries, the inhabitants have reclaimed from the sea by means of immense dikes.

Rivers.—Nine independent river-systems may be distinguished: those of the Memel, Pregel, Vistula (Weichsel), Oder, Elbe, Weser, Ems, Rhine, and Danube. Of these the Pregel, Weser, and Ems belong entirely, and the Oder mostly, to the German empire. The Danube has its sources on German soil; but only the fifth part of its course is German. Its total length is 1730 miles, and the Bavarian frontier at Passau, where the Inn joins it, is only 350 miles distant from its sources. It is navigable as far as Ulm, 220 miles above Passau; and its tributaries the Lech, Isar, Inn, and Altmühl are also navigable. The Rhine is the most important river of Germany, although neither its sources nor its mouths are within the limits of the empire. From the Lake of Constance to Basel (122 miles) the Rhine forms the boundary between the German empire and Switzerland; the canton of Schaffhausen, however, is situated on the northern bank of the river. From Basel to below Emmerich the Rhine belongs to the German empire—about 470 miles, or fourth-sevenths of its whole course. It is navigable all this distance, as are also the Neckar from Esslingen, the Main from Bamberg, the Lahn, the Lippe, the Ruhr, the Moselle from Metz, with its affluents the Saar and Sauer. Vessels sail up the Ems as far as Papenburg, and river craft as far as Greven, and the river is connected with a widely branching system of canals for turf-boats. The Fulda, navigable for 63 miles, and the Werra 38 miles, above the point where they unite, form by their junction the Weser, which has a course of 271 miles, and receives as navigable tributaries the Aller, the Leine from Hanover, and some smaller streams. Large steamers cannot, however, get as far as Bremen, and that commercial emporium has, in consequence, been obliged to form a seaport at Bremenhafen. The Elbe, after a course of 250 miles, enters German territory near Aussig, 432 miles from its mouth. It is navigable above this point to its junction with the Moldau. Hamburg may be reached by vessels of 10 to 11 feet draught. The navigable tributaries of the Elbe are the Saale (below Naumburg), the Havel, Spree, Elde, Sude, and some others. The Oder begins to be navigable almost on the frontier at Ratibor, 480 miles from its mouth, receiving as navigable tributaries the Glatz Neisse and the Warthe. Only the lower course of the Vistula belongs to the German empire, within which it is a broad, navigable stream of considerable volume. On the Pregel ships of 2500 tons reach Königsberg, and river barges reach Insterburg; the Alle, its tributary, may also be navigated. The Memel is navigable in its course of 113 miles from the Russian frontier. Germany is thus a country