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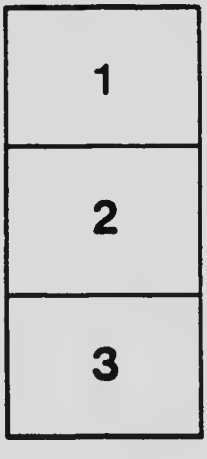

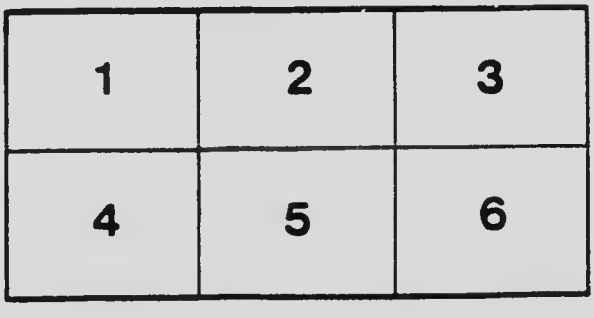

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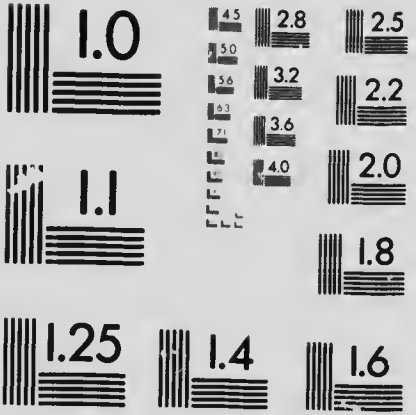

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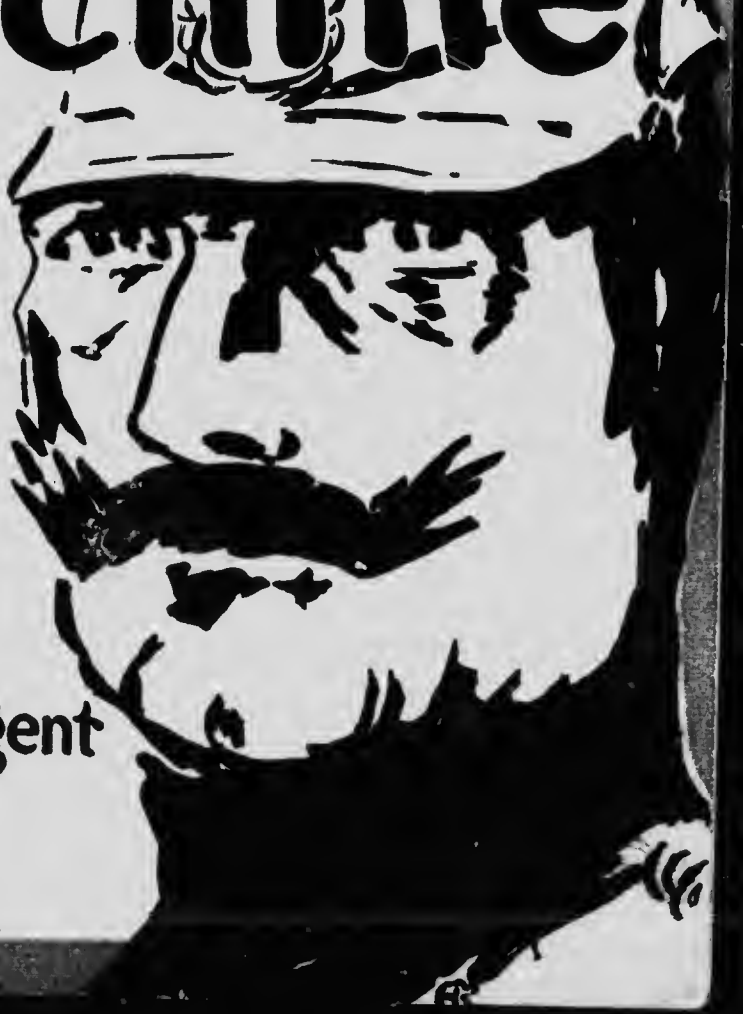

by
A Secret Agent

THE GERMAN WAR MACHINE

AN ACCOUNT OF THE INSIDE WORKINGS OF THE MOST STUPENDOUS AND EFFICIENT SYSTEM EVER DEVISED BY MAN FOR WARFARE AND SECRET DIPLOMATIC INTELLIGENCE

BY

DR. ARMGAARD KARL GRAVES

SECRET AGENT

Author of "The Secrets of the German War Office"

WITH EXTENSIVE NOTES ON THE MATERIAL RESOURCES OF GERMANY AND HER COLONIES

TORONTO

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"THE GERMAN WAR MACHINE"

THE numerical strength, disposition and efficiency of the German army are more or less well known. The brain and all prevailing power controlling its fighting force of four and half a million men — or taking the Triple Alliance into consideration — the forces of which would in the event of war be controlled from Berlin — a force in round numbers of 9,000,000 men is, however, not known. Here for the first time is published an account of the inside workings of the German War Machine as far as is possible for any one man to give. Through my intimate connections with the German and other Secret Service systems; through constant contact with prominent army and navy officers, I had special facilities of which I availed myself to the full, to gain the inside knowledge which I here commit to paper.

The most efficient and elaborate system ever devised by the ingenuity of man, used not only for war and destruction but as an intelligence clearing house for the whole of the Empire, is the German War Machine. Conceived by General Stein in the days of the Napoleonic wars, added to and elaborated by successive administrations, solely under the control

of the ruling house, its efficiency, perfect and smooth working is due to the total absence of political machinations or preferences. Brains, ability, and thorough scientific knowledge are the only passports for entrance in the Grosser General Stab, the General Staff of the German Empire. You will find blooded young officers and gray-haired generals past active efficiency, experts ranking from an ordinary mechanic to the highest engineering expert, all working harmoniously together with one end in view, the acme of efficiency. Controlled and directed by the War Lord in person through the Chef des Grossen General Stabs, in my time General Field Marshal von Heeringen, this immense machine, the pulsing brain of a fighting force of four and half a millions of men, is composed of from 180 to 200 officials.

At the Peace of Tilsit, after the crushing defeat of the Prussian armies at Prussian Eylau and Friedland, Bonaparte had Prussia and the whole of Central Europe at his mercy. Contrary to the advice of his generals, especially the succinct advice of his often unheeded mentor Talleyrand, to completely disintegrate Prussia, Napoleon through his fondness for pretty women let himself be tricked by Louise of Prussia. The interesting historical story of this incident may be apropos here, showing how the world's history can be changed through a kiss. At the Peace Conference in Tilsit, Napoleon, on the verge of disintegrating Prussia, met the beautiful Queen Louise of Prussia. Through her pleadings and the imprint of

Napoleon's kiss on her classic arm Bonaparte granted Prussia the right to maintain a standing army of 12,000 men. That in itself did not mean much but it gave able and shrewd Prussian patriots the opportunity to circumvent and hoodwink Bonaparte's policy.

Prussia has always been fortunate in producing able men at the most needed moments. A man arose with a gift for military organization. He had every province, district, town, and village in Prussia carefully scheduled and the able-bodied men thereof put on record. He selected the 12,000 men permitted Prussia under the Napoleonic decree and drilled them. No sooner were those men drilled than they were dismissed and another 12,000 called in. From this point dates modern conscription — the father of which was General Stein — and this also inaugurated the birth of the War Machine. In the three years Prussia had 180,000 well-drilled men and 120,000 reserves, quite a different proposition from the 12,000 men Napoleon thought he had to face on his retreat from Moscow, and which played a decisive factor in the overthrow of the dictator of Europe.

Through the wars of 1864 and 1866 to 1870, the Franco-Prussian War, the War Machine of Prussia was merged into that of the German Empire and is a record of increasing efforts, entailing unbelievable hard work and a compilation of the minutest details. The modern system of organization, especially the mobilization schedules, are Helmuth von Moltke's,

the "Grosse Schweiger," the Great Silent, the strategist of the 1871 campaign.

It is curious that there is a great similarity between the late Moltke and Heeringen. They have the same aquiline features, tall, thin, dried-up body, the same taciturn disposition, even to their hobbies — Moltke being an incessant chess player, Heeringen using every one of his spare moments to play with lead soldiers. He is reputed to have an army of 30,000 lead soldiers with which he plays the moment he opens his eyes — much in the same manner as Moltke, who used to request his chess-board the first thing in the morning. In military circles Heeringen is looked upon with the same respect and accredited with quite as much strategical knowledge as Moltke was. It is a significant fact, that, whenever there is any tension in Europe, especially between Germany and France, General von Heeringen or his comrade in arms, General von Thulsen Haeseler — also a great strategist and iron disciplinarian, immediately takes command of Metz, the most important base and military post in the Emperor's domain.

There is no man alive who knows one-half as much about the strategical position of Metz and the surrounding country as General von Heeringen. Often on stormy, bitter cold winter nights, sentries on outposts stationed and guarding the approaches of Metz are startled to find a gaunt, limping figure, covered in a gray army greatcoat with no distinguishing

marks, stalking along. Accompanied by orderlies carrying camp stools and table, night glasses and electric torches, halting repeatedly, hidden men taking down in writing the short, croaking sentences escaping between the thin compressed lips, the "Geist of Metz" prowls round measuring every foot of ground fifty miles east, west, north, and south of his beloved Metz. The steel tipped arrow ever pointing at the heart of France is safe in the hands of such guardians.

The visible head of this vast organization is called Der Grosse General Stab with headquarters in Berlin. Each army corps has a "kleine General Stab" who sends its most able officers to Berlin. These officers, in conjunction with the most able scientists, engineers, and architects the Empire can produce, compose the Great General Staff. The virtual head is the German Emperor. The actual executive is called "Chef des Grossen General Stabs."

There is a small, dingy, unpretentious room in the General Staff Gebaude where at moments of stress and tension or international complications, assemble five men. His Majesty, at the head of the table; to the right the Chef von Grossen General Stab; to the left his Minister of War; then the Minister of Railways, and the Chef von Admiral Stab. You will notice the total absence of the Ministers of Finance and Diplomacy. When those five men meet the influence of diplomatic and financial affairs has ceased. They

are there to act. The scratching of the Emperor's pen in that room means war, the setting in motion of a fighting force of 5,000,000 men.

Here is another instance:

When the feeling and stress over the Moroccan question was at its height General von Heeringen on leaving his quarters for his usual drive in the Thiergarten was eagerly questioned by a score of officers, awaiting his exit.

"Excellency! Geht's los?" ("Do we begin?")

Grimly smiling, returning their salutes and without pause, limping to his waiting carriage came his answer:

"Sieben Buchstaben, meine Herren!" ("Seven letters, gentlemen!")

In Germany military parlance this means the Emperor's signature, Wilhelm II, to the mobilization orders.

In order to give the reader a fairly correct view of this mighty organization, I have to explain each group separately. The whole system rests on the question of mobilization, meaning the ability to arm, transport, clothe, and feed a fighting force of four and one-half million men, in the shortest possible time on any given point in either eastern or western Europe. For let it be clearly understood that the main point of the training of the German armies is the readiness to launch the entire fighting force like a thunderbolt on any given point of the compass. Germany knows through past experience the advisability and

necessity of conducting war in an enemy's country. The German army is built for aggression. There are four main groups:

1. Organization.
2. Transportation.
3. Victualization.
4. Intelligence.

Each of these groups is, of course, subdivided into numerous branches which we shall go into under each individual head.

ORGANIZATION

First comes organization. The German army is composed of three distinct parts: the standing army, the reserves, and Landwehr.

The standing arm comprises 790,000 officers and men. This body of men is ready at an instant. It is the reserves who need an elaborate system of mobilization. The reserves are divided into two classes, first and second reserves. So is the Landwehr, having two levies — the first and second Aufgebot. Every able-bodied man on reaching the age of twenty-one can be called upon to serve the colors. One in five only is taken, as there is more material than the country needs — the fifth being selected for one of five branches: infantry, cavalry, artillery, Genie corps, or the navy. The time of service in the infantry is two years; in the cavalry three, in the artilery three, in the Genie corps two, and in the navy three. Well-conducted men get from two to four

months of their time. This is by no means a charity on the part of the authorities, but a well-thrashed and deep-laid scheme to circumvent the Reichstag as it gives the Emperor another 75,000 men. A certain class of men passing an examination called Einjahriges Zeugniss or possessing a diploma called Abitnrienten Examen (the equivalent of a B. A.) serve only one year in each branch. This class provides most of the reserve officers. The active officers, usually the scions of an aristocratic house or the sons of the old military or feudal families in Germany, are mostly educated in one of the state Kadetten-Anstalten, military academies, of which Gross-Lichterfelde bei Berlin is the most famous. The real backbone and stiffening of the German army and navy is the noncommissioned officers recruited from the rank and file. In fact, this body of men is the mainstay of the thrones in the German Empire, especially of Prussia. These men, after about twelve years of service in an army where discipline, obedience, and efficiency are the first and last word, are then drafted into all the minor administrative officers of the state, such as minor railway, post, excise, municipal, and police. The reader will see the significance of this when it is pointed out that not only the Empire but the War Machine has these well-trained men at its beck and call. The same thing applies to the drafting of officers to hold the highest administrative positions in the state.

There are twenty-five army corps all placed in

strategical position. The strongest is in Alsace-Lorraine and along the Rhine; the second in importance garrisoning the Prussian-Russian border. The whole country is subdivided into Bezirks commandos (districts posts) whose business is to have on record not only every able-bodied man — reservists — but every motor, horse, and vehicle available; also food and coal supply — in fact, everything likely to be wanted or useful to the army. Every German reservist, or otherwise, knows the reporting place of his district and has to report there when notified within twenty-four hours. The penalties for noncompliance are high even in peace times. In the event of war or martial law they are absolutely stringent. The commandos are so placed that they could forward their drafts of men and material to their provincial concentration points at the quickest possible notice. These provincial concentration points, being railway centers, are so located that the masses of men and materials pouring in from all sides can be handled and sent in the wanted and needed direction without any congestion. How this is done I shall explain when I come to trarsportation. In each of those district commandos are depots, Montirungs-Kammern (arsenals), where a full equipment for each individual on the roll is kept. The marvelous quickness with which a civilian is transferred into a full equipped military unit must be seen to be believed, and is only made possible through systematic training and constant maneuvers. These maneuvers are costly, but

have long been recognized in German military circles as essential in training the units and familiarizing the commanders with the handling of enormous masses of men. In the last Kaiser maneuvers over half a million men were concentrated and massed; in fact, shuttlecocked from one end of the Empire to the other without a hitch.

The control of the army in peace or in war lies with the Emperor. He is the sole arbiter and head. No political or social body of men has any control in army matters. No political jealousies would be permitted. Obedience and efficiency are demanded. Mutual jealousies and political tricks such as we have seen in the Russian campaign in the East and lately in France are impossible in the German system, for the Emperor would break instantly, in fact has done so, any general guilty of even the faintest indication of such an offense. And there is no appeal to a Congress, a Chamber of Deputies, or political organ against the Emperor's decision.

Last but not least, under the heading of the organization comes the financial aspect. Out of the five milliards of francs, the war indemnity paid by France to Germany in 1871, 200,000,000 marks in gold coin, mostly French, were put away as the nucleus of a ready war chest. In a little medieval-looking watch tower, the Julius Thurm near Spandau, lies this ever-increasing driving force of the mightiest war engine the world has ever seen. Ever increasing, for quietly and unobtrusively 6,000,000 marks in newly minted

gold coins are taken year by year and added to the store. On the first of October each year since 1871, three ammunition wagons full of bright and glittering twenty-mark pieces clatter over the drawbridge and these pieces are stored away in the steel-plate subterranean chambers of the Julius Thurm, ready at an instant's notice to furnish the sinews to the man wielding this force. This is a tremendous power in itself, for there are now close to 500,000,000 marks ($120,000,000) in minted gold coinage in storage there. This provides the necessary funds for the German army for ten calendar months. The authorities have no necessity to ask the country, warring politicians — in this instance the Reichstag — for money to start a campaign. They have got it ready to hand. Once war is declared and started, if needed they'll get the rest.

This money is under the sole control of military authorities. It has often been declared a myth. I know it to be a fact. Notwithstanding the financial straits Germany has gone through at times or may go through, this money will never be touched. It is there for one purpose only and that purpose is war. Needless to say, it is amply g arded. Triple posts in this garrison town, devices o flood instantly the whole under fifteen feet of water from the river Havel, are but items in the system of protection. Twice a year the Emperor in person, or his heir apparent, personally inspects his war chest. Mechanical-balanced devices are employed to check the cor-

rect weight. It is a marvelously simple mechanism by means of which in less than two hours the whole of this vast hoard of gold can be accurately checked and the absence of a single gold piece detected.

TRANSPORTATION

One of the most important parts of the organization is the question of transportation. Hannibal's campaigns against Cæsar and Napoleon's central European wars owed their success in a great measure, if not wholly, to their quickness of motion. This applies about tenfold in modern warfare. In actual armament the leading powers in Europe are practically on a par. The personnel, as regards personal courage, stamina, *elan*, or whatever you wish to call it, is fairly equal also. There is little difference in the individual prowess of French, Russian, English, and German soldiers. This is well known to military experts. The difference is mainly a question of discipline, technique, and preparedness, the main factor being, as indicated, the ability to throw the greater number of troops in the shortest possible time against the enemy at any given point, without exhausting man and beast unnecessarily and enervating the country to be traversed. It is therefore necessary to have numerous arteries of traffic at disposal. This will lead us later to the question of victualization, Germany following closely one of Moltke's axioms: "March separately, but fight conjointly."

Only in a country where all railroads, highways,

and waterways, and where post and telegraph are owned and controlled by the state, is it possible to evolve and perfect a system of transportation such as is at the disposal of the German General Staff. Every mile of German railroads, especially the ones built within the last twenty years, has been constructed mainly for strategical reasons. Taking Berlin as the center you will find on looking at a German, more especially a Prussian, railroad map, close similarity to a spider's web. From Berlin you will see trunk lines extending in an almost direct route to her French and Russian frontiers. Not single or double, but treble and quadruple lines of steel converging with other strategic lines at certain points such as Magdeburg, Hanover, Nordhausen, Kassel, Frankfort-on-the-Main, Cologne, or Strassburg — to name but a few. Places such as enumerated are invariably provincial commandos, having garrisons, arsenals, and depots on a large scale.

The capacity of the railroad yards for handling large bodies of men and vast amounts of goods swiftly is judiciously studied. At any given time, especially at tense political moments, at every large strategical railway center in Germany there are a certain number of trucks and engines kept for military purposes only — sometimes, as in the Rhine division during the acute period of the Morocco question, with steam up.

As previously related, 90 per cent. of all the railway officials are ex-soldiers. Five minutes after the signing of the mobilization orders by the Emperor,

the whole of the railway system would be under direct military control. Specially trained transportation and railway experts on the General Staff would take over the direction of affairs. Besides this, there exists in the German standing army a number of Eisenbahn Regimenter (railway corps) — all trained railroad builders and mechanics. Elaborate time-tables and transportation cards are in readiness to be put into operation on the instant of mobilization, superseding the civil time-tables of peace. Theoretically and practically the schedules are tested twice a year during the big maneuvers.

The same applies to the waterways and highroads of the Empire. A keen observer will often wonder at the broadness, solidness, and excellent state of repair of the chausseés and country roads, out of all proportion to the little traffic passing along. They are simply strategical arteries kept up by the state for military purposes. The heads of the transportation and railway corps in Berlin sit before the huge glass-covered tables where the whole of the German railway system to its minutest detail is shown in relief, and they by pressing various single buttons can conduct an endless chain of trains to any given point of the Empire.

To show the accurate workings of this system I shall relate an incident. During the Kaiser maneuvers in West Prussia a few years ago I happened to be at headquarters in Berlin delivering some plans and records of the English Midland Railway system when

a General Staff Officer entered the signal hall and made inquiries as to the whereabouts of a certain train having a regiment on board destined to a certain part of the maneuver field. One of the operators through the simple manipulation of some ivory keys in the short space of two and a half minutes (as I was keenly interested, I timed it) could show the exact spot of the train between two stations, the train being over 310 miles distant from Berlin.

As every class A1 vessel in the merchant marine of Germany, especially the passenger boats of the big steamship lines, can be pressed into government service, so can all motor vehicles, taxis, and trucks owned either privately or by corporations be called upon if considered necessary. Through this vast and far reaching system of transportation Germany is enabled to throw a million fully equipped men on to either of her frontiers within forty-eight hours. She can double this host in sixty hours more.

VICTUALIZATION

Napoleon's dictum that an army marches on its stomach is as true to-day as it was then, adequate provisions for man and beast being the most important factor in military science. The economic feeding of three-quarters of a million men in peace time is work enough. It becomes a serious problem in the event of war, especially to a country like Germany which is somewhat dependent on outside sources for the feeding of her millions. The authorities, quite aware of

a possible blockading and consequent stoppage of imports, have made preparations with their usual thorough German completeness. At any given time there is sufficient foodstuff for man and beast stored in state storehouses and the large private concerns to feed the entire German army for twelve months. This might seem inadequate, but is not so, the authorities being well aware that war in Europe at the present time could and would not last longer than such a period.

Once a year these storehouses are overhauled and perishable or deteriorating provisions replaced. Tens of thousands of tons of foodstuffs, especially fodder, are sold far below their usual market prices to the poorer classes, notably farmers. Likewise the material used by the army is as far as possible supplied by the farmer direct. The total absence of bloated, pudgy-fingered army contractors in Germany is pleasant to the eyes of those who know the conditions in some other countries I could mention.

Besides, the whole of the German fighting machine is so organized that in all probability decisive battles would be fought in the enemy's country, in which case the onus of feeding the troops would fall on the enemy, called in military parlance "requisitioning and commandeering." In this, German, and especially Prussian, quartermasters are in no way behind their English confrères of whose activity in the Boer War I know from personal experience.

To give but another instance of the scientific thoroughness in detail, take a single food preparation —

the Erbswurst (pea-meal sausage), a preparation of peas, meal, bacon, salt and seasoning, compressed in a dry state into air- and water-tight tubes in the form of a sausage, each weighing a quarter of a pound. Highly nutritious, light in weight, practically indestructible, wholesome, this is easily prepared into a palatable meal with the simple addition of hot water. Of this preparation huge quantities are always kept in stock for the army.

INTELLIGENCE

Without doubt the most important division of the General Staff and upon whose information and efforts the whole machine hinges is the Intelligence Department — really covering many different fields — for instance, general science, especially strategy, topography, ballistics, but mainly the procuring of information data, plans, maps, etc., kept more or less secret by other powers. In this division the brightest young officers and general officials are found. The training and knowledge required of the men in this service are exacting to a degree. It requires in most cases the undivided attention — often a life study — to a single subject.

It has been the unswerving policy of the Prussian military authorities to know as much of the rest of the European countries as they know of their own. In the war of 1870-71, German commanders down to a lieutenant leading a small detachment had accurate information, charts and data of every province in

France, giving them more accurate knowledge of a foreign country than that country had of itself. It is a notorious fact that, after the defeat of the French armies at Weissenburg and Worth and later at Metz, the French commanders and officers lost valuable time and strategical positions through sheer ignorance of their own country. This is impossible under the Prussian system. To-day there is not a country in Europe but of which there are the most elaborate charts and maps, topographically exact to the minutest detail docketed in the archives of the General Staff. This applies as a rule to the General Staff of most nations, but not to such painstaking details.

While undergoing instructions in the Admiral Stab in the Koenigergratzerstrasse 70, previous to my being sent on an English mission, a controversy arose between my instructor and myself as to the distance between two towns on the Lincolnshire coast. He pushed a button and requested the answering orderly to bring map 64 and the officer in charge. With the usual promptness both map and officer appeared. The officer, who could not have been more than twenty-five years of age, discussed with me in fluent colloquial English the whole of this section of Lincolnshire. Not a hummock, road, road-house, even to farmers' residences and blacksmith's shop of which he did not have exact knowledge. I expressed astonishment at this most unusual acquaintance with the locality, and suggested that he must have spent considerable time in residence there. Conceive my astonishment when

informed that he had never been out of Germany and the only voyage ever taken by him led him as far as Helgoland. Subsequently through careful inquiries and research — my work bringing me into constant contact with the various divisions — I found that the whole of England, France and Russia was carefully cut into sections, each of those sections being in charge of two officers and a secretary whose duty it was to acquaint and make themselves perfectly familiar with everything in that particular locality. Through the far-reaching system of espionage, the latest and most up-to-date information is always forthcoming, and time and again I myself, often returning from a mission like one of those to the naval base in Scotland, have sat by the hour verbally amplifying my previous reports.

A part of the intelligence system is the personality squad, whose duty it is to acquaint themselves with the personality of every army and navy officer of the leading powers. I have seen reports as to the environments, habits, hobbies, and general proclivities of men such as Admiral Fisher, commanding the Channel Squadron of the British Navy, down to Colonel Ribault, in charge of a battery in Toulouse. To military or naval officers and men of affairs, the reason and benefit of such a system are obvious. The general reader, however, may not quite see the point. The position of a commander in the field is analogous to the executive head of a big selling concern. A semi-personal knowledge of the foibles and characteristics

of his customers without doubt gives him an advantage over a rival concern, neglecting the personal equation being really more important than is generally understood. This has long been recognized and fully taken advantage of by the German Army authorities.

AËRIAL

Within the last few years an entirely new and according to German ideas most important factor has entered and disturbed the relative military power of European nations. This is the aërial weapon.

Since the days of Otto Lilienthal and his glider it has been the policy of Germany to keep track of all inventions likely to be embodied and made use of in the War Machine. It is a far cry from Lilienthal's glider to the last word in aërial construction such as the mysterious Zeppelin-Parseval sky monster that, carrying a complement of twenty-five men and twelve tons of explosives, sailed across the North Sea, circled over London, and returned to Germany. Lilienthal's glider kept aloft four minutes, but this new dreadnaught of Germany's flying navy was aloft ninety-six hours, maintaining a speed of thirty-eight miles an hour, this even in the face of a storm pressure of almost eighty meters. Such feats as these are significant. They are at the same time the outcome and the cause for the development of this part of the War Machine.

It is my purpose here to tell you how far Germany has advanced and progressed in this struggle for

mastery of the sky. I shall disclose facts about her system that have never appeared in print — that have never been heard in conversation. They are known only to the General Staff at Berlin, not even in the cabinets of Europe.

Germany without doubt has the most up-to-date aërial fleet in the world. The Budget of the Reichstag of 1908-1909 allows and provides for the building and maintenance of twelve dirigibles of Zeppelin type. As far as the knowledge of the rest of the world is concerned this is all the sky navy that Germany possesses. It is a fact, though, that she has three times the number which she officially acknowledges.

The dirigible balloon centers in Germany are five and they are situated at vitally strategic points. There are two on the French border, one on the Russian border, one on the Atlantic Coast, and a central station near Berlin. The exact places are Strassburg, Frankfort-on-the-Main, Posen, Wilhelmshafen, and Berlin. This does not include the marvelous station at Helgoland in the North Sea, this being a strategic point in relation to Great Britain. Nothing is known about this Helgoland station. No one but those on official business are permitted within a thousand yards of it. I shall tell things concerning it.

Besides these purely military posts, there are a number of commercial stations necessary as depots of the regular transportation aërial lines that operate for the convenience of the public. Like Germany's commercial steamers, however, they are controlled

and subsidized by the Government. At a few hours' notice they can be converted and made use of for Government purposes. Taking these transportation lines into consideration, it is safe to state that by summer of the present year Germany could send fifty huge airships to war.

It may be a puzzle to Americans why, in the face of disasters and accidents to these Zeppelins, Germany is spending about $1,000,000 on her aërial fleet. Now we come to a very significant point. I know and certain members of the German General Staff know, as well as trusted men in the aërial corps, that there are two conditions under which airships are operated in Germany. One is the ordinary more or less well-known system which characterizes the operation of all the passenger lines now in service in the Empire. It is the system under which all the disasters that appear in the newspapers occur. Airships that are used in the general army flights and maneuvers are also run under the same system as the passenger dirigibles — for a reason.

The other system is an absolute secret of the German General Staff. It is not used in the general maneuvers, only in specific cases, and these always secretly. It has been proved to be effective in eliminating 75 per cent. of the accidents which have characterized all of Germany's adventures in dirigibles and heavier-than-air machines. These statistics are known only by the German General Staff office.

Let us go into this further. Critics of the German

dirigible who foolishly rate the French aëroplane superior point out that the Zeppelins have three serious defects — bulk and heaviness of structure, inflammability of the gas that floats them, and inability to store enough gas to stay in the air the desirable length of time without coming down. The secret devices of the German War Office have eliminated all these objectionable features. They have overcome the condition of bulk and heaviness of structure by their government chemists devising the formula of a material that is lighter than aluminum, yet which possesses all of that metal's density and which has also the flexibility of steel. Airships not among the twelve that Germany admits officially are made of this material. Its formula is a government secret and England or France would give thousands of dollars to [illegible]ss it.

The objection of inflammability of the lifting power has also been overcome. The power of the ordinary hydrogen gas in all its various forms has been multiplied threefold by a new dioxygen gas discovered at the Spandau government chemical laboratory. This gas has also the enormous advantages of being absolutely noninflammable. I have seen experiments made with it. It cannot be used for illuminating purposes. Dirigibles that are equipped with it are not liable to the awful explosions that have characterized flights under the ordinary system. The new gas has also the enormous advantage of having a liquid form. To produce the gas it is only necessary to let the ordinary atmosphere come in contact with the liquid. Carried

in cylinders two feet long and with a diameter of six inches it is obvious that enough of this liquid can be carried aboard the big war dirigibles to permit their refilling in midair. So, you see, all the objections to the commonly known system of operation have been overcome by the War Office.

The last dirigible tried by the War Office in 1912, the mysterious Zeppelin X, made a continuous trip from Stettin over the Baltic to Upsala in Sweden, thence across the Baltic again to Riga in the Gulf of Finland, where it doubled and sailed back to Stettin. This was a journey of 976 miles. The airship had a complement of twenty-five men and five tons of dead weight. It traveled under severe weather conditions, the month being March, and snow-storms, hail and rain occurring throughout the voyage. The significance of this flight can be easily understood if you consider the distance from Strassburg or Düsseldorf to Paris or other strategical points to France is approximately 298 miles. A ship like the Zeppelin X could sail over the French border, dynamite the fortifications around Paris and return, the journey being roughly 900 miles — 76 miles less than the actual trip made by the Zeppelin X. Moreover, the German military trials have shown the possibility of an aërial fleet leaving their home ports and cruising to foreign lands and returning without the necessity of landing to replenish their gas tanks or fuel.

Let me show you how the German aërial corps is made up. It is called the Luftschiffer Abteilung and

is composed of ten battalions, each consisting of 350 men. They are all trained absolutely for this branch of the service. Only the smartest mechanics and artificers are selected. In the higher branches the most intelligent and bravest officers hold command. Considering the usual pay in continental armies, the wages of the men in the General aërial corps are exceptionally high. In fact they are the highest paid in the German army. They are not ordinary enlisted men, meaning that they serve only their two years' time. Most of them have agreed to serve a lengthy term. Married men are not encouraged to enroll in this branch of the service. It is obvious from the nature of the work that the hazards are often great. The wonderful system of the German War Machine has been installed with rare detail in the aërial corps. The equipment of the different stations is really marvelous. For everything human ingenuity has been able to devise concerning the dirigible you will find in application. Each station is fully equipped and is an absolutely independent center in itself. Take the base at Helgoland. It is the newest and the one that is always cloaked with secrecy.

At the extreme eastern corner of the island of Helgoland one sees, amid the sandy dunes, three vast oblong, iron-gray structures. At a distance they are not unlike overgrown gasometers. I say at a distance, for it is impossible for any visitor to get within a thousand yards of the station. The solitary approach is guarded by a triple post of the marine guard.

If you walk toward the station, before you come within a hundred yards of the guard, you will find large signs setting forth in unmistakable and terse language that dire and swift penalties follow any further exploration in that direction. Not only English but German visitors to Helgoland have found out through their course that even the slightest infringement of the rules of these signs is dangerous. I shall however, take you a little closer.

Walking on until you are within fifty yards of the great balloon sheds, you pause before a tall fence of barbed wire, this connected with an elaborate alarm-bell system that sounds in the two guard houses. For instance, if an enterprising secret agent of France were to try to steal up on the station, if he came by night and cut through the barbed wire, a series of bells would immediately sound the general alarm. Having passed through the six strands of barbed wire a tall octagonal tower meets the eye. In this tower are installed two powerful searchlights as well as a complete wireless outfit. All the Zeppelins carry wireless. By means of elaborate reflectors, it is possible with the searchlights to flood the whole place with daylight in the middle of the night. Thus ascensions can be made safely at any hour of the twenty-four. The three oblong sheds stand in a row, the middle being the largest, having spaces for two complete dirigibles, while the other sheds house but one each. They are about 800 feet long, 200 feet broad

and 120 feet high. The whole structure itself can be shifted to about an angle of forty degrees, this being worked on a plan similar to the railroad engine turntable. The reason for it is that with the veering of the wind the sheds are turned so that the doors will be placed advantageously for the removal of the airship from its place of shelter.

The whole layout and the vast area of space show that it is the Government's intention to still further increase the plant. In fact, on my last visit to Helgoland — and it was more than two years ago — I saw the evidence of another shed about to be built. At the station is the most efficient meteorological department of all the stations. The most up-to-date and sensitive instruments connected with this science are there in duplicates and the highest experts such as only Germany can produce are in charge of the department.

When I was at Helgoland I noticed a vast difference in the strength of the fortifications compared to what they had been. They used to be tremendous, but since the addition of the naval base they have become secondary. Half the soldiers on duty there have been transferred elsewhere; so with the big guns. There is no longer any need for them. As I stated, I saw a fourth big balloon shed in the course of construction. I have not been on the island for two years. Nobody has been near the extreme eastern end except those closely identified with the service. Considering that Germany has not built more than one extra shed, that

means five dirigibles, and there is nothing on earth that could stand up against them. Helgoland does not need forts any more. The new forts float in the sky and can rain death.

Helgoland has always been a sore spot of British diplomacy. Originally England owned the island; now it is a menace to England. When Lord Salisbury was Prime Minister of England, he conceived what he believed to be a shrewd diplomatic move. He offered Bismarck the island of Helgoland in exchange for some East African concessions. Helgoland is now the key and guard of Germany's main artery of commerce, being the key to Hamburg. With the dirigible station of Helgoland to guard her, Hamburg is impregnable and on England's northern coast they have a way of looking out across the North Sea with troubled eyes, for who knows when those terrible cartridge-shaped monsters will rise into the air and sweep over the sea? Stranger things have happened, even though the countries have their secret diplomatic understandings.

Let us consider one of these new war monsters, the latest and most powerful, the X 15. The latest Zeppelins, charged with the newly discovered dioxygenous gas, giving these sky battleships triple lifting capacity; the perfecting of the Diesel motor, giving enormous consumption (fifty of these Diesel engines, their workings secret to the German Government, are stored under guard at the big navy yards at Wilhelm-

shafen and Kiel, ready to be installed at the break of war into submarines and dirigibles), have given the German type of aircraft an importance undreamed of and unsuspected by the rest of the world.

The operating sphere of the new balloons has extended from 100 to 1,200–1,100 kilometers. Secret trial trips of a fully equipped Zeppelin like X 15, carrying a crew of twenty-four men, six quick-firing guns, seven tons of explosive, have extended from Stettin, over the Baltic, over Swedenburg in Sweden, recrossing the Baltic and landing at Swinemunde, with enough gas, fuel, and provisions left to keep aloft another thirty-six hours. The distance all told covered on one of these trips was 1,180 kilometers. This fact speaks for itself. The return distance from Helgoland to London, or any midland towns in England, corresponds with the mileage covered on recent trips. In the event of hostilities between England and Germany, this statement needs no explanation. That is why I mentioned that the latter-day Zeppelins were a powerful factor in bringing about an amiable understanding between those two powerful countries. For neither the historic wooden walls of Nelson's day nor the steel plates of her modern navy could help England or any other nation against the inroads of the monsters of the air.

The capacity of seven tons of explosive does not exhaust the resources of this type of weapon. I have it on good authority that the new Zeppelins can carry

double that quantity of explosive if necessary. As the size of these vessels increases, so does the ratio of their carrying capacity.

Picture the havoc a dozen such vultures could create attacking a city like London or Paris. Present-day defense against these ships is totally inadequate. In attacking large places, the Zeppelins would rise to a height of from 6,000 to 8,000 feet, at which distance these huge cigar-shaped engines of death, 700 feet long, would appear the size of a football, and no bigger. I know that Zeppelins have successfully sailed aloft at an altitude of 10,000 feet. Picture them at that elevation, everybody aboard in warm, comfortable quarters, ready to drop explosives to the ground. The half informed man — and there appear to be many such in European cabinets, which recalls the proverb about a little knowledge being a dangerous thing — likes to say that a flock of aëroplanes can put a dirigible out of business. Consider now an aëroplane at an elevation of 6,000 feet and remember that the new Zeppelins have gone thousands of feet higher. An aviator at 6,000 feet is so cold that he is practically useless for anything but guiding his machine. How in the world is he or his seat-mate going to do harm to a big craft the size of the Zeppelin that is far above him? An aviator who has ever gone up, say 8,000 feet, will tell you when he comes down what a harrowing experience he has had. What good can an individual be, exposed to the temperature and the elements at such an altitude, in doing harm to the

calm, comfortable gentlemen in the heated compartments of the Zeppelin?—Quatsch! which is a German army term for piffle!

At 8,000 feet the small target a Zeppelin affords would move at a rate of speed of from thirty-five to sixty miles an hour. The possible chances of being hit by terrestrial gunfire are infinitesimally small. This does not take into account the vast opportunities that a dirigible has for night attacks or the possibility of hiding among the clouds. The X 15, sailing over London, could drop explosives down and create terrible havoc. They don't have to aim. They are not like aviators trying to drop a bomb on the deck of a warship. They simply dump overboard some of the new explosive of the German Government, these new chemicals having the property of setting on fire anything that they hit, and they sail on. They do not have to worry about hitting the mark. Consider the size of their target. They are simply throwing something at the City of London. If they do not hit Buckingham Palace they are apt to hit Knightsbridge. And remember that whatever one of the new German explosives strikes, conflagration begins.

Aëroplanes, biplanes, monoplanes, and the other innumerable host of small craft so often quoted as a possible counterdefense against the Zeppelin, are overrated, and are in any case theoretical. The German authorities have made vast and exhaustive trials in these matters. The strenuous efforts on the part of this Empire to increase its dirigible fleet is to my

way of thinking answer enough. The German General Staff at Berlin tries out more thoroughly than any nation in the world every new device of warfare. They have tried the aëroplane and the dirigible. I have heard the leading experts and aviators who have been assigned to both types agreeing that the Zeppelins of the X 15 type have nothing to fear from any present-day flying machine — and that is good enough for me.

RESOURCES OF GERMANY AND HER COLONIES

GERMAN EMPIRE
(*Deutches Reich*)

Capital—Berlin
Emperor and King—William II (acceded June 15, 1888)

THE German Empire is situated in the central part of Europe between the Alps and the North and Baltic Seas. It extends from lat. 47° to 57° N., and from long. 6° to 23° E., being bounded on the east by Russia, on the north by Denmark, on the southeast and south by Austria and Switzerland, and on the west by France, Luxemburg, Belgium, and the Netherlands. Germany has a frontage on the North and Baltic Seas of about 1,200 miles. Two-thirds of the country at the south is highland, and one-third at the north is part of the lowland. The course of the leading rivers show that the country slopes toward the north. The topography is often spoken of as complicated, and the watercourses are reconstructed by a large system of canals which are used for commercial purposes. The Rhine, which connects Germany with Switzerland and the Netherlands, is the most important stream. The Elbe connects Berlin with Hamburg. About 6,000 miles of the rivers of Germany are navigable, and there are 1,500 miles of canals. The Baltic Sea Canal, opened in 1895, saves two days' time for steamers from Hamburg to Baltic ports.

Early History.—German tribes, which occupied the north of the country at the commencement of the Christian era, displaced the Celtic tribes and finally overran all the country to the Alps. The Treaty of Verdun, in 843, divided Europe into three parts, resembling present-day Germany, France, and a section in the northern part of Italy. In 888 invading Norsemen divided the territory into five independent kingdoms which correspond with Germany, France, Italy, and Upper and Lower Burgundy. Conrad of Franconia took the throne of Germany, and his son, Henry III, extended the boundaries of Germany on the side of Hungary. In 1276, Rudolph I further acquired the duchies of Austria, Carinthia, and Styria. During the next three centuries progress was slow, and the Thirty-Years' War (1618-1648), crippled the industry of the country and left the people burdened with taxes. The rise of Prussia began in 1701, when the Elector Frederick assumed the title of King of Prussia, and rapidly grew during the succeeding century. In 1806 Napoleon formed the Confederation of the Rhine which took away half of Prussia's provinces. After Napoleon's overthrow these were formed into the kingdoms of Westphalia, and the

duchy of Warsaw. The Congress of Vienna, in 1815, united Germany into a loose confederation, of which Austria was the head. In the nineteenth century Bismarck strengthened the Prussian army to such an extent that the last great war with France in 1870 was a succession of German victories. The German Empire was founded following the treaty of peace with France in 1871, and King William of Prussia assumed the title of German Emperor.

Government.—By the Constitution dated April 16, 1871, the Empire consists of 4 kingdoms, 6 grand-duchies, 5 duchies, 7 principalities, 3 free cities, and 1 territory. The position of the Emperor is hereditary, and the succession is limited to the Prussian dynasty. The Emperor represents the Empire in all matters affecting international law, military, and political affairs. The Legislature consists of the Bundesrath, or Federal Council, composed of 58 members, representing the States of the Empire, and the Reichstag, or Imperial Diet, with 397 members, who are elected by general suffrage. The members of the Bundesrath are appointed by the governments of each State for one session, and the members of the Reichstag are elected by the people for a term of five years. The Kingdom of Prussia is represented in the Bundesrath by 17 members, Bavaria by 6, Saxony by 4, Wurtemberg by 4, the Grand-Duchies of Baden by 3, of Hesse by 3, of Mecklenburg-Schwerin by 2, and the 19 other Grand-Duchies, Duchies, Principalities, Free Towns, and Reichsland by one or two, making a total of 19 representatives. In the Reichstag the Kingdom of Prussia has 236 deputies, Bavaria 48, Saxony 23, Wurtemberg 17, the six Grand-Duchies 36, the five Duchies 10, the seven principalities 7, the three free towns of Lubeck, Bremen, and Hamburg 5, and the Reichsland of Alsace-Lorraine 15. The Bundesrath and Reichstag meet in annual session, and all laws of the Empire must receive the votes of an absolute majority of the two bodies. The Emperor has no vote on laws passed by these legislators. The Bundesrath is presided over by the Chancellor of the Empire, while the deputies of the Reichstag elect a President. The laws passed by these bodies must be promulgated by the Emperor, and the promulgation must have the counter-signature of the Chancellor. The Bundesrath has 12 standing committees, which are a supreme and consultative board. The Emperor has the right to open, adjourn, and close the Reichstag. The Cabinet officers are as follows: Foreign Affairs, Home Office, Admiralty, Justice, Treasury, Post Office, Secretaries of the Colonies, Presidents of Bureaus known as Railways, Invalid Fund, Bank, Debt Commission, and Court-Martial. All male citizens above the age of 25, not active in military service, or disqualified in other ways, are privileged to vote. The administrations of the States are in effect separate governments.

A uniform system of courts was created in 1877, divided into four grades, and the procedure is the same throughout the Em-

pire. The lowest, or district courts (1,933 in all), hear petty civil and criminal cases. The territorial courts (193) have from three to five judges, divided into criminal and civil chambers. The superior courts (28) have civil and criminal divisions. The Imperial Court, at Leipzig, Saxony, is the chief tribunal, and is composed of four criminal and six civil chambers. Its 90 judges are appointed by the Emperor, upon the nomination of the Federal Council, for life.

Area and Population.—The area of the Empire is estimated at 208,780 square miles. The country is divided into 26 States, including Alsace-Lorraine, and the total population, according to the official census taken December 1 1910, was 64,903,423, showing an increase of 4,261,934 since 1905. The greatest gains were made in the larger cities, and the figures showed a decline in the rural districts. In numbers females exceed males in Germany, this being accounted for in part by the increasing emigration among men. In 1910 Prussia had a population of 40,163,333, nearly two-thirds the total population of the Empire. The following are the official figures:

States	Area Sq. Miles	Population, Dec. 1, 1910			Population 1905
		Men	Women	Total	
Prussia	134,616	19,847,888	20,315,445	40,163,333	37,293,264
Bavaria	29,292	3,375,229	3,501,268	6,876,497	6,524,372
Saxony	5,789	2,322,185	2,480,300	4,802,485	4,508,601
Wurtemberg	7,534	1,191,383	1,244,228	2,435,611	2,502,179
Baden	5,823	1,059,137	1,082,695	2,141,832	2,010,728
Hesse	2,966	639,214	645,005	1,282,219	1,209,175
Mecklenburg-Schwerin	5,068	317,884	321,995	639,879	625,045
Saxe-Weimar	1,397	204,409	212,757	417,166	388,095
Mecklenburg-Strelitz	1,131	53,523	52,824	106,347	103,451
Oldenburg	2,482	243,825	238,605	482,430	438,856
Brunswick	1,418	242,739	251,648	491,387	485,958
Saxe-Meiningen	953	136,687	142,105	278,792	268,916
Saxe-Altenburg	511	106,385	109,928	216,313	206,508
Saxe-Coburg-Gotha	764	125,353	131,855	257,208	242,432
Anhalt	888	161,171	169,876	331,047	328,029
Schwarzburg Sondershausen	333	44,194	45,790	89,984	85,152
Schwarzburg Rudolstadt	363	49,350	51,362	100,712	96,835
Waldeck	433	30,541	31,182	61,723	59,127
Reuss, Elder Branch	122	34,695	37,921	72,616	70,603
Reuss, Younger Branch	319	74,264	78,501	152,765	144,584
Schaumburg-Lippe	131	23,396	23,254	46,650	44,992
Lippe	469	73,230	77,519	150,749	145,577
Lübeck	115	56,888	59,645	116,533	105,857
Bremen	99	148,419	150,3	298,736	263,440
Hamburg	160	505,935	509,772	1,015,707	875,149
Alsace-Lorraine	5,604	964,043	907,659	1,871,702	1,814,564
Total	208,780	32,031,967	32,871,456	64,903,423	60,641,489

There are 47 cities of more than 100,000 population. Of these, 7 have more than 500,000 population. They are Berlin (without

suburbs) 2,004,153; Hamburg, 930,000; Munich, 593,053; Leipzig, 583,743; Dresden, 540,882; Cologne, 511,043, and Breslau, 510,929. Four others have more than 300,000 population. They are Frankfort on the Main, 414,406; Dusseldorf, 356,733; Nuremberg, 332,539; and Charlottenburg (a suburb of Berlin), 304,280. Twelve other cities have more than 200,000 population, and 24 others have populations ranging from 100,000 to 200,000 each.

Ten years ago there were but 2 cities in the Empire with more than half a million population and only 33 with more than 100,000 population.

The last occupation census (1907) showed the following: Agriculturists, 9,732,472; foresters, 150,785; miners and metal workers, 11,256,254; business men, 3,477,626; household servants, 1,736,450; professional men, 1,738,530; without stated employment, 3,404,983.

The number of births in 1909 was 2,038,356; deaths, 1,154,296; marriages, 491,127. The number of immigrants in 1910 was 25,531, over 90 per cent going to the United States. Eighty per cent of the population speak the German language. The remainder are widely scattered among Polish, Lithuanian, Czech, Moravian, Frisian, etc. There are over 1,000,000 subjects of foreign powers.

Education.—Education is compulsory throughout Germany, between the ages of 6 and 14, the law is strictly enforced, and illiteracy is rare. In the matter of school systems all States act independently, but the methods are almost uniform. The schools are supported generally by local taxes and the State fund. In 1907 there were 60,584 elementary schools with 166,597 teachers, and 9,737,262 pupils. The average distribution is one school to 158 scholars. There were also 620 private schools, with 43,720 pupils, who received similar instruction to that of the public schools. The secondary schools are divided into 7 or 8 different groups, depending upon the course of education, such as classic, scientific, and the like. Their total number was 1,529. There were 11 technical high schools, with 16,570 students; and 7 other kinds of trade, industrial, and agricultural colleges, totaling 49 institutions, and 19,032 pupils. In 1911 there were 21 universities, with a total of 54,962 students, as follows:

University	Total enrollment	Women	University	Total enrollment	Women
Berlin	8,039	695	Strassburg	1,964	31
Munich	6,890	198	Jena	1,817	69
Leipzig	4,592	81	Kiel	1,760	51
Bonn	4,070	250	Wurzburg	1,429	12
Freiburg	2,884	155	Konigsberg	1,381	91
Halle	2,451	49	Giessen	1,334	33
Breslau	2,432	129	Erlangen	1,030	28
Heidelberg	2,413	158	Greifswald	1,029	78
Gottingen	2,353	203	Rostock	834	6
Marburg	2,192	83			
Tubingen	2,061	42			
Munster	2,007	107	Total	54,962	2,552

Since the fall of 1908, when women were first allowed to matriculate in the German universities, the number of their registrations has been steadily increasing.

Religion.—Since the time of the Reformation, Germany has been strongly Protestant. Entire religious liberty, however, is allowed by the State. In different parts of the Empire, local laws are enforced governing such matters. The Jesuit order is not allowed, nor are the other religious orders such as convents and monasteries. Benevolent institutions, however, of the Catholic and other churches flourish. Central Germany is the Protestant stronghold, while the Catholics predominate in Bavaria and Alsace-Lorraine. In 1905, according to the last religious census, there were 37,646,852 Protestants (or 62 per cent), 22,109,644 Catholics, 259,717 Christians of other sects, and 697,862 Jews.

Agriculture, etc.—Germany is noted as being both a pastoral and a manufacturing country. About ten million, or one-sixth of the population are engaged in agricultural pursuits, and 91 per cent of the total area is productive. In addition to the principal cereals, there are also large areas devoted to sugar beets, hops, flax, hemp, and vine culture.

There were 5,736,082 farms in 1907, the total area being 78,665,370 acres, an average per farm of about 13.7 acres. The farms held by the peasantry comprise 69 per cent of the total area. It is estimated that 88 per cent of the land tilled by German peasant farmers is owned by them.

The statistics of the principal crops are as follows:

Crops	Acreage 1911	Yield 1910 Bushels	Est. Yield 1911 Bushels
Wheat	4,878,000	141,883,000	139,000,000
Rye	15,163,000	413,802,000	416,000,000
Barley	3,917,000	133,330,000	131,500,000
Oats	10,692,000	544,287,000	525,000,000
Potatoes	8,206,000	1,597,174,000	.....
Hops	66,000	11,700 tons	.....
Clover	4,969,000	13,165,000 "	.....
Alfalfa	508,000	1,828,000 "	.....
Hay	20,485,000	46,133,000 "	.....

Statistics for live stock (1908) were as follows: Cattle, 20,630,544; horses, 4,345,047; sheep, 7,703,710; swine, 22,146,532; asses 10,349; goats, 3,533,970.

The fisheries for 1910 were unusually profitable with a catch of 170,144,319 kilograms, aggregating $8,910,290.

Manufactures.—Germany ranks second among European countries in manufacturing. The occupation census of 1907 showed over eleven million persons directly concerned in such work. The chief manufactures are food products, metal products, beverages, clothing, and art objects. Sugar refineries are found in Prussia, Bavaria, Brunswick, and Anhalt.

During 1910 there was a considerable increase in the chemical industry. German chemical compounds have become well known in the markets of the world. There were 26 new chemical companies organized during 1910 with a capital of $7,378,000. There was an increase in the production of agricultural machines and implements, sewing machines, bicycles, and machines for wood and metal working, sugar industries, and paper making.

In nearly all branches of the textile industries the slight improvement shown in 1909 was maintained in 1910. Prices of the finished product, however, did not keep pace with the greatly increased cost of raw material, especially wool, cotton, and linen. The automobile trade in 1910 was distinctly good. The number of motor vehicles in use in 1911 was: passenger, 53,478; industrial, 4,327. Conditions which prevailed in the German toy industry in 1910 were favorable. The value of the exports, with the exception of that of 1907, was the largest known and amounted to $20,500,000, against $18,100,000 in 1909. The sales in the German market were estimated at $4,760,000. The United States and the United Kingdom take nearly 60 per cent of the exports and about 50 per cent of the yearly production. In nearly every branch of the German electrical industries the factories were kept busy. The volume of business increased during the year by nearly 30 per cent.

The output of the German shipbuilding yards in 1910 was 312 steamers, of 176,174 gross tons, and 598 sailing vessels, of 89,639 tons. Of the vessels built in 1910, 17 were for the German navy.

Mining.—The principal mineral products for 1910 were as follows:

Product	1910	Product	1910
	Metric tons	Ores—Continued	Metric tons
Asphalt	81,186	Manganese	80,559
Coal	152,827,777	Zinc	718,316
Kainit	4,219,668	Potash salts, n. e. s.	4,062,385
Lignite	69,473,883	Potassium, chloride of	711,560
Oils, mineral	115,168	Pyrites	215,708
Ores:		Rock salt	1,424,064
Copper	925,957	Sodium, chloride of	669,959
Iron	28,709,654		
Lead	118,497		

With the exception of zinc and lead ore, there was an increase in the output in 1910 of all products as compared with the previous year.

Exports and Imports.—Provisional statistics recently published by the Imperial Statistical Office show that the total volume of the foreign trade of Germany, including precious metals, increased in value from $4,339,148,000 in 1911 to $4,689,623,000 in 1912.

The foreign trade exclusive of precious metals, was as follows: Imports, $2,449,517,000 in 1912 and $2,310,035,000 in 1911; exports, $2,115,482,000 in 1912 and $1,929,243,000 in 1911.

GERMAN EMPIRE

A detailed list of the total foreign trade for 1910 amounted to over four billion dollars, the imports, as shown in the following table, being slightly in excess of the exports:

Countries	Imports	Exports
United States	$282,600,000	$150,600,000
Argentina	85,000,000	57,200,000
Australia	67,000,000	15,100,000
Austria-Hungary	180,700,000	195,500,000
Belgium	77,500,000	93,000,000
Bolivia	7,000,000	.....
Brazil	66,100,000	29,000,000
British India	96,200,000	21,400,000
British South Africa	14,100,000	12,900,000
British West Africa	25,800,000	3,600,000
Canada	.....	8,700,000
Ceylon	8,400,000	.....
Chile	36,800,000	15,400,000
China	22,500,000	15,800,000
Cuba	.....	5,300,000
Denmark	37,600,000	53,500,000
Dutch East Indies	44,600,000	11,900,000
Egypt	22,300,000	8,100,000
France	121,100,000	129,500,000
Italy	65,200,000	77,000,000
Japan	8,800,000	21,200,300
Mexico	.....	11,200,000
Netherlands	61,500,000	118,700,000
Norway	11,800,000	28,500,000
Roumania	16,100,000	15[illegible],000
Russia	330,000,000	127,300,000
Spain	33,400,000	17,000,000
Sweden	39,000,000	45,300,000
Switzerland	41,400,000	107,700,000
Turkey	16,000,000	24,900,000
United Kingdom	182,500,000	262,300,000
All other countries	124,600,000	96,400,000
Total	2,126,300,000	1,779,000,000
Precious metals	89,500,000	40,300,000
Grand total	$2,215,800,000	$1,819,300,000

The principal articles of import were as follows:

Articles	Value	Articles	Value
Animals: Horses	$25,200,000	Jute	$9,200,000
Breadstuffs:		Lignite	16,700,000
Barley	73,400,000	Oil cake and meal	22,900,000
Bran, etc.	31,600,000	Oil, petroleum	20,800,000
Corn	14,800,000	Phosphates	10,300,000
Oats	11,500,000	Animal foods	69,100,000
Rye	10,100,000	Rice	20,100,000
Wheat	88,900,000	Saltpeter	32,100,000
Coal	36,200,000	Seeds	29,900,000
Cocoa beans	10,800,000	Silk, and manufactures	48,500,000
Coffee	35,700,000	Tin	9,200,000
Copper	53,200,000	Tobacco, raw	24,200,000
Copra, palm kernels, etc.	34,800,000	Wood for building purposes	57,900,000
Cotton, and manufactures	149,300,000	Wool, and manufactures	139,400,000
Eggs	41,900,000	All other articles	671,900,000
Flax	9,000,000	Total	2,126,300,000
Fruits	17,900,000	Precious metals	89,500,000
Gutta-percha	44,700,000	Grand total	$2,215,800,000
Hides and skins	130,000,000		
Machinery	21,500,000		
Ore	35,300,000		

The principal exports were as follows:

Articles	Value	Articles	Value
Anilin, etc.	$20,200,000	Iron and steel, and manufactures of	$222,900,000
Beer	5,800,000	Leather goods	8,600,000
Books, maps, etc.	11,800,000	Oil cake and meal	6,700,000
Breadstuffs:		Pianos, etc.	10,600,000
Flour, wheat	10,300,000	Porcelain ware	9,100,000
Oats	11,500,000	Potash, muriate of	9,300,000
Rye	26,800,000	Rags	6,700,000
Wheat	12,100,000	Rubber goods	7,900,000
Caoutchouc, etc.	12,100,000	Silk goods	43,500,000
Cellulose	7,800,000	Sugar	46,000,000
Clothing	18,000,000	Wool, and manufactures	102,300,000
Coal	76,900,000	All other articles	834,000,000
Coke	20,200,000		
Copper and brass ware	15,200,000	Total	1,779,000,000
Cotton and manufactures	111,800,000	Precious metals	40,300,000
Etchings, etc.	11,900,000		
Gold and silver ware	9,800,000		
Hides and skins	58,700,000		
Indigo	10,300,000	Grand total	$1,819,300,000

Banks and Banking.—The Imperial Bank, founded in 1875, is at the head of the German banking system. This institution serves as the depository for the Imperial Treasury, and, notwithstanding the fact that it is a private company, it is managed by a board of governors appointed by the Government, which is responsible to the Chancellor of the Empire. This is not the sole bank of issue in the country, for in 1906 this privilege was also granted to the Bavarian Bank of Issue, Saxon Bank, Bank of Baden, Bank of Brunswick, and the Wurtemberg Bank of Issue. Besides these banks there were 202 other banks in 1910 with a capital exceeding $572,500,000. The large banks are central institutions for loan transactions, accept deposits, carry on a check business, and engage in financial, mercantile, and industrial undertakings. There were 2,774 savings banks in Germany with 6,743 branches, eighteen million depositors, and over [illegible] and a third billions of dollars, gross savings.

The five note-issuing banks showed the following condition in 1910 (marks being translated into dollars, round figures):

Assets		Liabilities	
Coin and Bullion	$296,676,750	Capital	$58,875,000
Notes of other Banks	10,668,750	Reserve	19,915,000
Bills Receivable	283,979,500	Notes Outstanding	437,777,500
Other items	120,816,250	Other items	195,543,750
Total	$712,141,250	Total	$712,141,250

Finance.—As a result of the financial reforms instituted by the Imperial Government, the budget for 1910 showed a deficit of only $5,470,000, while in the budget of the preceding year there was a shortage of $35,700,000. The Finance Minister stated that the receipts of the Prussian railways in 1908 were $25,000,000

less than the budget estimates; in 1909 there was a net profit of $43,300,000; in 1910 there was an excess of $57,100,000, and it is estimated that 1911 will show a net profit of $60,000,000.

In 1913 the total funded debt was $1,322,072,040, divided into bonds bearing 3, 3½, and 4 per cent. About $150,000,000 is free from interest, and the public debt is further offset by several interest-bearing invested funds. Only one State fund is not invested, and this, the war reserve of $30,000,000, is held in gold.

The revenue of the Empire is derived from customs, Imperial taxes, railways, telegraph, and administrative sources. Excise duties are levied on beer, liquor, tobacco, sugar, and salt, and the deficit in the total receipts is covered by contributions from the States, according to the proportion that their population bears to that of the Empire.

The State levy for 1911 (given in dollars) was as follows:

Imperial Assessment		Imperial Assessment	
Prussia	$32,989,600	Schwarzburg-Sondershausen	$75,125
Bavaria	5,252,750	Schwarzburg-Rudolstadt	85,425
Saxony	3,983,450	Waldeck	52,100
Wurtemberg	1,955,250	Reuss, Elder Branch	62,300
Baden	1,777,550	Reuss, Younger Branch	127,550
Hesse	1,067,450	Schaumburg-Lippe	39,700
Mecklenburg Schwerin	551,225	Lippe	128,425
Saxe-Weimar	342,925	Lubeck	93,575
Mecklenburg Strelitz	91,300	Bremen	208,525
Oldenburg	388,625	Hamburg	774,425
Brunswick	429,050	Alsace-Lorraine	1,601,500
Saxe-Meinigen	237,575		
Saxe-Altenburg	182,300		
Saxe-Coburg-Gotha	214,125		
Anhalt	289,350	Total	$53,001,175

The following was the estimated budget of revenue and expenditure for the year ending March 31, 1912:

Revenue		Expenditure	
Customs and Excise	$370,685,475	Reichstag	$530,325
Indemnities	32,850	Chancellery	78,625
Posts and Telegraphs	183,540,400	Foreign Office	4,647,175
Printing Office	3,147,000	Home Office	22,260,950
Railways	32,223,250	Army	178,761,200
Banks	3,897,500	Navy	41,801,800
State Levies	53,001,175	Dep't of Justice	714,900
All other items	18,868,675	Dep't of Treasury	50,340,300
To Balance	11,557,250	Colonial Office	721,025
		Railway Office	121,200
		Railway Maintenance	25,481,825
		Government Debt	70,089,425
		Pensions	38,449,625
		Posts and Telegraphs	160,926,950
		Printing Office	2,184,550
		Incidental Expense	79,520,375
		Audit Office	323,325
Total	$676,353,575	Total	$676,953,575

In addition to the above there is an extraordinary budget amounting to. $14,243,950, devoted to colonial expansion, military ex-

peditions, and the like, which is covered by special appropriations and taxes.

The monetary unit is the mark, equivalent to 23.8 cents American money. It is divided into 100 pfennigs. Gold coins are 20 and 10 mark pieces; silver, the 1, 2, and 5 mark pieces; nickel, the 5 and 10 pfennig pieces. There are also bronze coins of smaller denominations.

Army.—Every able-bodied male between the ages of 17 and 45 years is liable to service in the army. Recruits are taken at the age of 20, and the term of active service is two years in the ranks and five years in reserve. The military forces have four divisions for Prussia, Bavaria, Wurtemberg, and Saxony. The troops are composed of 23 army corps, forming 498 squadrons of cavalry, 574 field batteries, 630 battalions of infantry, 165 fortress companies, 153 companies of engineers, 74 machine-gun sections with infantry, 16 machine-gun sections with cavalry, and 68 squadrons of train, balloonists, telegraphists, and battalions of railway troops. The war strength is estimated at 4,330,000, the Landwehr number 1,800,000, the Ersatz Reserve 30,000, and the Landsturm, 800,000 men. About 1,000,000 young men are examined each year, and about one-half of this number are pronounced fit for service. The military budget for 1912 totaled $178,761,200.

The standing army of 1911 was as follows:

	Officers	Men
Infantry	51,361	360,259
Cavalry	10,322	64,114
Artillery	16,115	80,501
Other troops	8,641	35,416
Total	86,412	510,290

Navy.—The following was the condition of the navy on January 1, 1912, according to a special report of the U. S. Bureau of Naval Intelligence:

Vessels	In Commission		Building	
	Number	Tonnage	Number	Tonnage
Battleships (Dreadnought type)	7	138,960	9	216,500
Battleships, first-class	21	252,712	..	.....
Coast defense vessels	5	20,273	..	.....
Armored cruisers (new type)	2	41,000	3	73,000
Armored cruisers	9	94,215	..	.....
Cruisers above 6,000 tons	...	.....	..	.....
Cruisers 6,000 to 3,000 tons	24	98,180	6	33,750
Cruisers 3,000 to 1,000 tons	15	24,528	..	.....
Torpedo boat destroyers	107	57,012	12	9,000
Torpedo boats	22	3,789	..	.....
Submarines	11	4,080	12	6,000
Total	226	744,719	42	337,850

The personnel of the navy on the above date was as follows: Admirals of the Fleet, 2; admirals, 5; vice admirals, 12; rear admirals, 22; captains and commanders, 302; other line officers, 1,596; midshipmen at sea, 398; engineer officers, 433; medical officers, 286; pay officers, 236; chaplains, —; warrant officers, 2,512; enlisted men, 50,389; marine officers, 109; enlisted men (marines), 4,672. Total, 60,974.

Germany has a continuing shipbuilding program, governed by a fleet law authorized by the Reichstag. For 1912 there are authorized 1 battleship, 1 armored cruiser, 2 cruisers, 12 destroyers. Eventual strength to consist of 38 battleships, 20 armored cruisers, 38 cruisers, 144 destroyers.

The total naval estimates for 1911-12 amount to $107,232,000, as compared with $106,320,000 for the preceding year.

The naval appropriation bill for 1911-12 authorized the following new construction: Three battleships, 1 armored cruiser, 2 scout cruisers, 12 torpedo-boat destroyers, 3 surveying vessels, and $3,570,000 for submarine-boat construction and experiments.

Trade Routes.—The chief ports are Hamburg, Bremen, Kiel, Lübeck, Rostock, Stettin, and Danzig. The Kaiser Wilhelm Canal, which connects the North Sea with the Baltic, is 61 miles long, and was constructed at a cost of $39,000,000. There are 4,989 miles of navigable rivers, of from 6 to 16 feet draft; 875 miles of rivers flanked with canals; 1,315 miles of barge canals; and 1,254 miles of ship canals. These in addition to the railways, totaling 37,586 miles, form a complete network of transportation mediums, rendering traffic easy and cheap to all parts of the Empire.

In 1910 there were 4,658 vessels of all kinds in commission, of 4,430,227 tons, against 4,640 vessels of 4,356,067 tons on January 1, 1909. Of the total number of vessels 2,377, of 453,411 tons, were sailing craft, 331, of 111,540 tons, seagoing lighters or tugs, and 1,950, of 3,865,276 tons, steamers.

Germany now has the largest railway system in Europe, next to Great Britain, and the capital invested is over $3,500,000,000. Each of the 26 States has a railway system, of which but a small part is in the hands of private individuals. The Empire now has about 10.78 miles of railroad to every 100 square miles of territory. The freight carried in 1909, including passengers' baggage, live stock, and goods of every variety, was 55,255 million tons, an increase of 51.7 per cent over 1899. The transportation of passengers brought in $196,704,620 in 1909, which was an increase of 54.9 per cent in 10 years. The number of officials and workmen employed was 691,087, being about 1 railroad employee to every 92 inhabitants in Germany. Main lines comprise 59 per cent of the total mileage, while the branch lines make up 41 per cent. In the last ten years the main lines have increased in length only 6.4 per cent, while the branch lines have increased 43.7 per cent.

GERMAN EMPIRE

THE GERMAN STATES

The German Empire is composed of 26 States, 4 being kingdoms, 6 grand-duchies, 5 duchies, 7 principalities, 3 free towns, and one Reichsland.

Statistics as to area, population, industries, commerce, etc., are given under the German Empire. Further statistics may be found in the following tables:

Ruling Heads.—The rulers of the States (1911) were as follows:

States	Rulers	When Acceded
Alsace-Lorraine	Statthalter, Count von Wedel	October 18, 1907
Anhalt	Duke, Friedrich II	January 24, 1904
Baden	Grand Duke, Frederick II	September 28, 1907
Bavaria	King, Otto	June 13, 1886
Bremen	(Free City)	
Brunswick	Regent, Johann Albrecht, Duke of Mecklenburg	June 5, 1907
Hamburg	(Free City)	
Hesse	Grand Duke Ernest Ludwig	March 13, 1892
Lippe	Prince, Leopold IV	September 27, 1904
Lübeck	(Free City)	
Mecklenburg-Schwerin	Grand Duke, Friedrich Franz IV	April 10, 1897
Mecklenburg-Strelitz	Grand Duke, Adolf Friedrich	May 30, 1904
Oldenburg	Grand Duke, Frederick August	June 13, 1900
Prussia	King, William II	June 15, 1888
Reuss, Elder Branch	Prince, Heinrich XXIV	April 19, 1902
Reuss, Younger Branch	Prince, Heinrich XIV	July 11, 1867
Saxe-Altenburg	Duke Ernst	February 7, 1908
Saxe-Coburg-Gotha	Duke, Charles Edward	July 30, 1900
Saxe-Meiningen	Duke, George II	September 20, 1866
Saxe-Weimar	Grand Duke, Wilhelm Ernst	January 5, 1901
Saxony	King, Frederic Augustus III	October 15, 1904
Schaumburg-Lippe	Prince, Adolf	April 30, 1911
Schwarzburg-Rudolstadt	Prince, Gunther	January 19, 1890
Schwarzburg-Sondershausen		
Waldeck	Prince, Friedrich	May 12, 1893
Wurtemberg	King, William II	October 6, 1891

By the terms of the constitution of the Empire, all the German States form an eternal union for the protection of the realm and the care of the German people. Each State has a representative in the Bundesrat who votes under binding instructions, and not according to his own convictions. It is, therefore, not the individual member who votes in the Bundesrat, but the State of Prussia, or Bavaria, as the case may be. Therefore, the German Empire is a monarchy which is limited both federatively by the Bundesrat, and constitutionally by the Reichstag.

Finance.—The financial condition of the various States in 1911 was as follows:

State	Revenue	Expenditure	Debt
Alsace-Lorraine	$15,700,000	$15,700,000	$9,000,000
Anhalt	7,413,150	7,413,150	1,374,900
Baden	31,299,970	33,785,435	130,009,610
Bavaria	156,537,150	156,537,150	496,250,675
Bremen	10,619,100	14,222,600	6,585,785
Brunswick	4,590,670	4,738,380	7,588,140
Hamburg	48,304,640	48,304,640	169,481,355
Hesse	19,741,640	19,741,640	111,210,550
Lippe	634,585	642,375	511,930
Lübeck	3,394,545	3,394,545	14,978,880
Mecklenburg-Schwerin	1,156,375	1,123,250	33,023,950
Mecklenburg-Strelitz	1,156,375	1,123,250	556,600
Oldenburg	3,943,575	3,829,210	18,455,315
Prussia	1,021,328,685	1,021,328,685	2,382,919,295
Reuss, Elder Branch	453,775	453,775	
Reuss, Younger Branch	659,700	643,990	260,135
Saxe-Altenburg	1,174,640	1,174,640	221,535
Saxe-Coburg-Gotha	2,042,335	1,987,085	1,204,780
Saxe-Meiningen	2,415,875	2,229,200	1,511,350
Saxe-Weimar	3,063,845	3,063,845	729,125
Saxony	92,269,840	92,269,840	224,209,400
Schaumburg-Lippe	217,730	217,730	86,710
Schwarzburg-Rudolstadt	723,830	723,830	1,144,545
Schwarzburg-Sondershausen	1,397,165	1,397,165	575,000
Waldeck	362,320	362,320	387,975
Wurtemberg	25,213,700	25,285,085	147,447,455

Industries.—According to the occupation census of June 12, 1907, the latest statistics issued, the population of Germany was divided as in the table below:

State	Agriculture, Cattle rearing, etc.	Forestry, Hunting, Fishing	Mining, Metal Works, etc.	Trade	Domestic and other Service	Professions	Without Occupation
Prussia	5,789,267	87,574	6,688,381	2,056,173	1,134,485	1,027,012	2,067,644
Bavaria	1,677,980	19,968	1,020,203	358,181	155,291	181,371	424,354
Saxony	253,987	7,915	1,238,991	286,642	111,349	122,863	259,384
Wurtemberg	501,308	4,753	432,114	100,109	53,774	62,146	115,459
Baden	421,226	5,570	398,858	122,003	47,456	59,841	119,002
Hesse	160,543	2,844	220,563	64,770	28,519	42,858	61,853
Meckl.-Schwerin	124,951	4,124	69,464	29,486	22,736	17,773	38,983
Saxe-Weimar	61,320	1,190	73,039	17,983	9,923	9,602	23,103
Meckl.-Strelitz	21,206	654	12,171	4,644	4,340	2,772	6,923
Oldenburg	81,080	955	63,144	20,828	12,517	10,860	19,838
Brunswick	66,286	2,070	94,263	28,469	15,100	13,393	28,805
Saxe-Mein'gen	33,483	1,185	60,075	10,631	4,718	6,082	10,259
S.-Altenb'g	25,274	529	49,096	8,622	4,016	3,070	10,179
S.-Coburg-G	30,793	1,030	51,800	12,304	5,738	5,478	12,405
Anhalt	37,846	1,073	59,517	17,182	9,381	8,071	20,756
Sch.-Sonders	12,704	491	16,425	3,159	1,921	1,975	4,088
Schw.-Rudol.	13,315	452	20,457	3,717	1,898	2,231	4,122
Waldeck	15,426	234	8,037	3,563	1,705	1,931	4,454
Reuss, ä. L.	4,729	212	21,983	2,921	1,226	986	2,970
Reuss, j. L.	12,958	537	37,786	7,450	3,367	2,978	7,010
Sch.-Lippe	6,203	303	8,337	1,851	1,232	793	2,415
Lippe	23,398	247	18,423	4,318	4,243	1,918	7,387
Lübeck	4,078	263	20,876	13,661	5,011	4,121	6,775
Bremen	8,269	412	56,990	39,372	13,220	8,559	15,921
Hamburg	11,516	360	164,952	162,543	47,057	30,463	48,790
Alsace-Lorr'ne	333,326	5,840	350,309	97,544	36,227	109,383	82,104
Total ...	9,732,472	150,785	11,256,254	3,477,626	1,736,450	1,738,530	3,404,983

Education.—Education is compulsory and provided for in every State, being supported by both State and national funds. The following table shows the progress in education, according to the last official reports, for 1907:

State	Schools	Teachers	Pupils	State Expense
Alsace-Lorraine	2,912	5,459	242,943	$762,000
Anhalt	259	1,021	54,114	719,000
Baden	2,054	9,966	411,130	1,118,000
Bavaria	7,434	16,420	958,037	4,734,250
Bremen	63	726	32,853	503,500
Brunswick	436	1,480	84,658	298,000
Hamburg	219	3,289	115,360	2,413,500
Hesse	1,688	4,839	303,804	722,000
Lippe	153	334	25,043	143,750
Lübeck	54	401	13,035	211,500
Mecklenburg-Schwerin	1,242	2,120	94,816	62,000
Mecklenburg-Strelitz	231	383	15,802	94,750
Oldenburg	642	1,313	74,904	284,250
Prussia	37,761	102,764	6,164,398	20,594,500
Reuss, Elder Branch	61	192	13,402	12,750
Reuss, Younger Branch	117	356	22,664	102,500
Saxe-Altenburg	199	553	36,546	82,500
Saxe-Coburg-Gotha	241	768	41,183	140,750
Saxe-Meiningen	321	776	46,874	172,500
Saxe-Weimar	468	1,071	61,313	295,000
Saxony	2,304	12,721	775,098	2,597,500
Schaumburg-Lippe	46	93	7,938	17,000
Schwarzburg-Rudolstadt	135	274	17,254	46,750
Schwarzburg-Sondershausen	98	234	14,270	43,750
Waldeck	124	173	10,290	27,500
Wurtemberg	2,382	5,505	315,778	1,333,250
Total	60,584	166,597	9,737,262	$37,632,750

Diplomatic and Consular Service.

To the United States

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GERMAN COLONIES

Germany has various colonies in Africa, the Pacific Ocean, and one in Asia. The total square miles of these colonial possessions is 1,027,740 square miles. The estimated population is 14,826,046. The affairs of each colony are directed by an Imperial Governor. The following is a list of colonies:

The colonial possessions of the German Empire are not considered a valuable acquisition in view of the fact that the commercial intercourse consists merely of supplies for the troops.

Name	Date Acquired	Area Sq. Miles	Native Population 1909	White Population 1909
Africa				
Togo	1884	33,700	1,000,000	330
Kamerun	1884	191,130	3,000,000	1,127
South-West Africa....	1884-90	322,450	167,000	11,791
East Africa.....	1885-90	384,180	10,000,000	3,387
Asia				
Kiau-chau	1897	200	33,000	20,074
Pacific				
Kaiser Wilhelm's Land	1885	70,000	110,000	197
Bismarck Archipelago.	1885	20,000	190,000	400
Caroline Islands.....	1899	560	41,400	231
Marianne Islands.....	1899	250	2,646	
Marshall Islands.....	1886	150	15,000	164
Solomon Islands.....	1886	4,200	230,000	74
Samoan Islands.....	1899	1,000	37,000	468
Total		1,027,740	14,826,046	38,243

TOGO

Togo, or Togoland, is a protectorate in West Africa lying just north of the Gulf of Guinea, and with Dahomey on the east and the Gold Coast colony on the west and north. The northern boundary is still in doubt. Estimated area 33,700 square miles. Estimated population, 1,000,000, with a foreign population of 330. Togo has a coast line of about 30 miles which rapidly widens out inland between the rivers Monu and Volta to over 100 miles. The coast is sandy, rising slowly toward the interior, which becomes undulating and culminates in the Aposso Mountains, which enter from northern Dahomey. The chief rivers are the Mono, the Sio, the Dako, and the Haho. The coast is broken up by lagoons. The climate is moist and generally unhealthful. The country possesses abundant natural resources which have been exploited rapidly during the past ten years. Large plantations have been developed, upon which coffee, cocoa, cotton, rubber, palms, tobacco, corn, rice, and copra are being raised. In the forests are valuable oil palms, dye woods, caoutchouc, rubber-trees, banana palms, and other tropical growth. Ivory is also obtained. Domestic stock raising is yet in its infancy. There is no mining of importance, and little manufacturing except such native industries as weaving, pottery, straw plaiting, and the like. One narrow-gauge railway of 128 miles connects the chief port, Lome (the capital), with Little Popo, and there are also good highroads under construction. The population is chiefly Soudanese, and comes nearer to being self-supporting than any other German colony. The total exports in 1909 were $1,843,014, and the imports $2,808,326. The principal items of export from Togo during 1910 were: palm kernels, 4,050 tons; palm oil, 1,500 tons; maize, 1,650 tons; rubber, 67 tons; cotton, 235 tons; groundnuts, 5 tons; and ivory, 1 ton. The estimated budget of expense for 1911 was $837,500, with revenues amounting to $720,000.

Togo became a German protectorate in 1884, and the Imperial Governor is assisted by a Secretary and Inspector of Customs, and a local council of seven members.

The Government has stations at Lome, Little Popo, Porto Seguro, and Bagida, all on the coast, besides some 8 or 10 stations inland.

KAMERUN

Kamerun is situated upon the west coast of central Africa, lying just south of Lake Chad, and between the French Congo on the east, and British Nigeria on the west. The area is 191,130 square miles. Estimated population, 3,000,000, with a foreign population of 1,127. The coast line, about 200 miles long, is low and swampy. The country widens inland, running both in a northerly and easterly direction. Between the coast region and the Hinterland is a high plateau, about 100 miles wide, covered with impenetrable forests. The country is more mountainous to the north and is watered by numerous rivers, which are not navigable. The chief river is the Sanaga, draining the central part of the country to the middle of the coast line. The climate is unhealthful on the coast, but very agreeable inland. The natives are well advanced in agriculture, maintaining large plantations of corn, tobacco, manioc, yams, coffee, vanilla, ginger, pepper, etc. Stock raising is also successful, especially in the Hinterland. The forests abound in tropical trees, and there is a brisk trade in palm oil, rubber, and ivory. There are 5 ports, the chief one, Buea, being the seat of Government. Other important trading stations are Victoria, Rio del Rey, Tampo, Krivi, and Banyo. Several short railway lines are under construction. The total exports in 1909 were $3,925,299, and the imports were $4,430,650. The estimated budget of expense for 1911 was $2,317,500, with revenues amounting to $1,312,500.

Kamerun became a German protectorate in 1884, and the Imperial Governor is assisted by a Chancellor, two secretaries, and a local council of three members. The Government maintains 4 schools, at Duala, Victoria, Juande, and Garua.

GERMAN SOUTH-WEST AFRICA

The Protectorate known as German South-West Africa includes the tract of land lying, as the title indicates, on the southwest coast of that continent, just north of the Cape of Good Hope, and west of British South Africa. It is bounded on the north by Angola. Estimated area, 322,450 square miles. Estimated native population, 167,000, and the white population, 11,791. The natives are chiefly Hottentots, Bushmen, and Bantu tribes. The coast line is about 900 miles long and in its center is the British port of Walfisch Bay which, with some 430 square miles, forms a part of Cape Colony. There are three natural regions—the

coast, which is bordered by a belt of sand, the Kalahari Waste, which is barren and desert, and the highlands, which rise to an altitude of from 3,000 to 6,000 feet, and culminate in the Omatako Mountains. The climate though dry is healthful. The coast lands are controlled by the Deutsche Kolonial-Gesellschaft, which has given the name of Namaland to the southern portion, and Damaraland to the northern. Three harbors are of importance—that of Walfisch Bay, Angra Pequena, and Swakopmund. The last is the most important, both because it is German and because it is nearest to the highland or more valuable portion of the country. Several millions of acres of Crown lands have been allotted for agriculture, but beyond market gardening and small crops, little has been done in the way of farming. Live stock has been more successful, the natives pasturing large herds and flocks among the upland hills. A Government enumeration in 1910 showed 121,139 cattle, 343,989 sheep, 327,095 goats, 10,661 horses, 6,064 mules, 6,629 asses, 5,208 swine, and 954 camels. Diamonds have been found near Luderitz Bay in Namaland, and considerable quantities of copper have been mined in the highland region of Otavi. Two railways run inland from Swakopmund, one going to Windhoek, the capital, 237 miles, and the other running northeast to Otavi, 237 miles. In the extreme south another road runs from Luderitz Bay to Keetmanshoop and then southwest, with a total length of 994 miles. Most of the transportation, however, is conducted in bull-carts. The total exports in 1909 were $5,418,000, and the imports were $8,680,000. The budget of expense for 1911 was $8,750,000, with revenues amounting to $4,652,000.

This colony was the first to be established by Germany. The Imperial Governor is assisted by a secretary, and a board of district officers. The Government has established 15 schools, besides supporting numerous missions.

GERMAN EAST AFRICA

German East Africa is a colony located on the east-central coast, just south of Lake Victoria, and east of the Belgian Congo. Lake Tanganyika forms part of the western boundary. Estimated area is 384,180 square miles. Estimated native population, 10,000,000, and white population, 3,387. The natives are of the Bantu race, and there are some 10,000 Arabs, and Syrians. The coast line covers about 620 miles, and is well watered by the Rovuma, Rufigi, Rufu, and several other rivers. None of these streams, however, is of any importance for navigation. The climate is tropical and unhealthful. Near the coast are extensive forests of palm, mangrove, baobab, tamarind, etc., while in the higher inland regions hardier trees like the banyan, acacia, sycamore, and cotton tree flourish. The plantations cultivated by the Germans are chiefly near the coast, and most of the cereals, with other

tropical plants are successfully grown. Stock raising, while successful, has not been developed to any great extent. The chief domestic animals are sheep and goats, there being 1,750,000 of the former, and 2,200,000 of the latter in 1910. Mining has not yet been developed, although veins of coal and gold have been found in paying quantities. Precious stones such as agates, topazes, and garnets, have been discovered. The chief ports are Dar-es-Salaam, Bagamoyo, Saadani, Pangini, Kilwa, Lindi, Mikindani, and Tanga, but none of these have deep harbors. Nearly 500 miles of railways have been constructed to date, but the bulk of transportation follows wide, well-kept highways, of which the Government has already constructed over 1,000 miles. The total exports in 1909 were $3,280,000, and the imports were $8,488,000. The estimated budget of expense for 1911 was $3,650,000, with revenues amounting to $2,465,000.

The various parts of this colony were acquired between 1885 and 1890. The country is controlled by an Imperial Governor, and is divided into 9 districts, each with an administrator, and a local council of from 3 to 5 members. There are 31 Government schools besides various local missions.

KIAU-CHAU

Kiau-chau, a seaport on the east coast of Central China, in the Province of Shantung, was occupied by Germany in 1897; and a lease for 99 years in the following year gave that country official possession. It is used as a naval port and base of supplies, and its administration is under control of the Imperial Naval Department. The area of the tract surrounding the port is about 200 square miles. There is a native population of 33,000, and a white population of 20,074. In this tract are included some 33 townships, with their various local industries, such as agriculture, soap-making, and silk spinning. Total exports in 1909 were $13,683,000, and the imports were $16,368,000, including exports and imports, passing through this port from the surrounding provinces. The estimated budget of expense for 1911 was $3,385,000, with revenues amounting to $1,285,000.

KAISER WILHELM'S LAND

In 1885 the northeastern section of New Guinea was occupied by Germany, and declared a protectorate under the name of Kaiser Wilhelm's Land. The southeast half was held by Great Britain, and the entire western portion by Holland. Area of the German section, about 70,000 square miles. Population, 110,000 natives, and 197 white settlers. The chief ports are Friedrich Wilhelmshafen, Berlinhafen, and Konstantinhafen. The seat of the Government is Herbertshohe in the Bismarck Archipelago. The native products are chiefly caoutchouc, copra, and coconuts.

There are also sago palms, ebony, bamboos, and other tropical woods. Horses, cattle, and goats abound. The total exports for this colony and the Archipelago for 1909 were $614,750, and the imports were $666,500. The estimated budget of expense for 1911 was $415,000, with revenues amounting to $24,000.

BISMARCK ARCHIPELAGO

Bismarck Archipelago lies east and northeast of Kaiser Wilhelm's Land, and embraces a circular group of islands, of which the most important are Neu Pommern, Neu Mecklenburg, Neu Lauenburg, Neu Hannover, Admiralty, and Anchorite. The total area is estimated at 20,000 square miles, the native population 190,000, and the foreign population 400. The chief port is Herbertshohe, which is the seat of government. The chief products, cotton, coffee, copra, and rubber.

CAROLINE, PELEW, MARIANNE, AND MARSHALL ISLANDS

These chains of islands lying east by northeast from the Philippines, in the Pacific, have been occupied by Germany from 1886, the date of the cession of the Marshall Islands, to 1899, when the others were taken over. The largest of the Marianne Islands, Guam, was ceded to the United States in 1898. The total area of these island groups is about 960 square miles. The population is about 60,000. The Carolines comprise about 500 coral islets, occupied chiefly by Malays, with a sprinkling of Chinese, and Japanese. The chief export is copra. The Pelews are also coral islands, numbering 26, and mostly uninhabited. The Mariannes are partly coral, and partly volcanic in origin, and have a few roving tribes of Malays. The Marshalls consist of two rows of lagoon islands, numbering 24 in all. The largest is Jaluit, with the seat of government. The four groups are now districts of the New Guinea Government. The first three groups are divided into two districts: the Eastern Carolines, with Ponape as the seat of government; and the others with Yap as the seat. The Marshalls form a third district. The total exports for 1909 were $1,467,250, and the imports were $949,000. The estimated budget of expense for 1911 was $14,250, with revenues amounting to $12,750.

SOLOMON ISLANDS

The portion of this group of Pacific islands is under German control. Bougainville, the largest island, and Buka were acquired by this country in 1886; but Great Britain obtained most of the rest in 1899. The German islands are under the direction of the Imperial Government of Kaiser Wilhelm's Land. The total area

is about 4,200 square miles, and the native inhabitants number about 230,000. The islands are wild and inhabited by roving tribes. Sandalwood, tortoise-shell, and fish products are the chief articles of barter.

SAMOAN ISLANDS

Two of the largest of the Samoan Islands in the South Pacific, Savaii, and Upolu, were transferred to Germany in 1899. These total about 1,000 square miles, and have a native population of about 37,000. There are nearly 500 white settlers, and civilization is well advanced. Both the islands are fertile and well watered, with rising ground toward the center. The chief port is Apia, which is the seat of government. Agriculture flourishes, the staple products being copra, and cocoa beans. Rubber is also being extensively cultivated. There are 75 miles of good roads, with more under construction. The Government maintains a school and there are also several mission schools. The imports are chiefly obtained from Australia, and New Zealand, the regular lines being established. The natives are of the Polynesian race, and many have been nominally converted to Christianity. The total exports for 1909 were $755,500, and the imports were $834,500. The estimated budget of expense for 1911 was $23,250, with revenues amounting to $21,000.

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