Rome was cited in support of the English conquest of Ireland, and was appealed to by both parties in the Scottish War of Independence. Little as the Papal authority was respected by even the most Catholic monarchs when they were at the head of large and well-found armies, yet in matters of dubious equilibrium the authority of the Pope had some weight; and as his was a power not limited to any particular state or cluster of states, but ever present throughout all the transactions of Christian realms with each other, it had, beyond doubt, an influence gradual and continuous in giving modern diplomacy the amount of specific character which it had obtained at the period of the Reformation. Under the head BALANCE OF POWER, the evils arising from the absence of a supreme power to judge between states, as the courts of law decide questions between individual citizens, will be found discussed. It suffices here to say, that much of the deficiency is filled up by the fortunate train of events which have created, throughout the civilized world, a traditional system of diplomatic practice.

The representatives of great nations, following up the traditions of the science of diplomacy, have often sought by similar acts to do what they considered their duty to their country by taking advantage of every opportunity of aggrandizing it. But modern political philosophy and morality teach us that this is not the manner in which great nations are to be supported or aggrandized, and that for their diplomatic servants there is spread out a far nobler field of exertion. It is founded on the consciousness that the real power of states must come from within—from the sound condition of the people, physically, industrially, and morally—from well-poised political institutions and good government. If these are absent no diplomatic skill can make up for them; if they be present it cannot enhance the real power of the state which possesses them. But to the diplomatic representatives of states both powerful and honest a function of a higher character still than mere national aggrandizement belongs, in the capacity, by able, temperate, and honourable negotiation, to keep feeble states from being crushed by their potent neighbours, to preserve peace in the world so long as it can honourably be preserved, and to see generally that international justice is observed among mankind. The true functions of the great powers are in some measure embodied in the well-known lines of Virgil:

> "Tu regere imperio populos, Romane, memento;
> Hæ tibi erunt artes; pacisque imponere morem,
> Parcere subjectis, et debellare superbos."

The historical events, and the industrial and commercial progress which have during the past hundred years so aggrandized the power of Britain among European nations, have, in this view of the uses of our diplomacy, become a great boon to the smaller states, and even to the citizens of the greater. The parliamentary responsibility, and the perpetual public scrutiny and discussion to which the acts of our statesmen are subjected, are not only checks on our own diplomatic acts, but on those of every other civilized state. It was a boast attributed to one of the great fabricators of British diplomacy, the elder Pitt, that not a gun should be fired throughout the world without Britain knowing why. If Britain could make good this boast, it would extend in some measure to mankind at large the blessings enjoyed at home from living under a responsible government. As it is even at present, the continuous liability of having whatever he does called before Parliament and the public, must be an ever present and influencing motive with every British diplomatist. Hence he not only dare not countenance any act of national rapacity, tyranny, or fraud, but he is, as the representative of a nation which has great power and no secrets, a check upon the diplomatic honesty of all the world.

In contrast to the old opinions which attributed the power and prosperity of nations to diplomatic ability, overlooking the substantial sources of material progress, a political sect has appeared in recent times who denounce the diplomatic system as foolish or wicked, and proclaim the doctrine of non-intervention in the affairs of other nations. It is practically clear, however, that whatever degree of perfection the world may reach in time, the first great power which avows this opinion will become the immediate victim of its rivals; and thus, should Britain withdraw herself from the diplomacy of Europe, the despotic states would soon become strong enough to shut up the commerce of the world, and cast the world two centuries back in civilization.

It is perhaps scarcely necessary to mention that the source of the diplomatic organization in any nation is its supreme power; but it is useful to keep in view that, for the rapid movements of this department of politics, nations the most jealous of their constitutional rights have been obliged to place at least provisional power in the hands of individual rulers. Thus in Britain the sovereign, independently of Parliament, has technically the power to make treaties and to declare peace and war; and an authority not much less extensive is committed to the president of the United States. The guidance of a great state's relations with foreign countries is generally committed to one department of the Government—with us it is the function of the foreign secretary. How far he is bound to consult his colleagues in his intercourse with foreign states has sometimes been matter of acrimonious discussion. The representatives of the Government at foreign courts, though the dignified character of their missions sometimes gives them a rank much higher than that of their instructor, must obey the directions of the foreign minister. In the negotiation of treaties there is an old-standing dispute among publicists, how far nations can be bound if their ambassadors exceed the instructions given to them, which are generally kept secret. When, therefore, an important international act, such as a treaty, is undertaken, there are many sanctions and ceremonials to be accomplished before it is held to be completed. While matters are in a vague condition, many briefly expressed fundamental suggestions will have passed among the negotiators in the form of notes. When the matter becomes more ripe for adjustment, it assumes the shape of a protocol, or draft of the conditions. The ambassadors, when all is adjusted, sign the articles of the treaty; but still it is generally deemed essential that the several Governments should ratify it, or, admitting that their representatives have not exceeded their instructions, engage to fulfil the bargain they have made. In this country, whenever treaties affect the private rights of the citizen, they must be ratified by Act of Parliament. In addition to notes and substantive treaties, the most important documents in diplomacy may be considered the manifestoes, in which, paying homage to public opinion and the established rules of diplomacy, Governments profess to justify their conduct. When any vile act of oppression or injustice is perpetrated, it is generally followed by an able manifesto, and the ingenuity of the accomplished diplomatist is taxed to make the deed appear just, rational, and necessary.

The nature and functions of the large body of officers who chiefly conduct the diplomacy of the world having been described under the heading AMBASSADOR, it only remains to notice the incidental circumstance that custom has for some time established the French language as the language of diplomacy. In the 16th and during a great part of the 17th century, Latin was employed. In Ludlow's memoirs there is, under the year 1656, a curious notice to the effect that the Swedish ambassador "complained of the delays in his business, and that, when he desired to have the articles of this treaty put into Latin according to the custom of treaties, it was fourteen days they made him stay for that translation, and sent it to *one Mr Milton, a blind man*, to put them into Latin, who, he said must use an amanuensis to read it to him, and that amanuensis might publish the matter of the articles as he pleased, and that it seemed strange to him there should be none but a blind man capable of putting a few articles into Latin." In turning over the pages of the great collection of treaties by Dumont and Rousset, one may observe how gradually, during the ascendency of Richelieu, and the subsequent reign of Louis XIV., the use of the French language radiates from the immediate diplomatic transactions of France over those of Europe at large. Probably its propagation was originally connected with the visions of that universal French empire to which Louis XIV. seemed to be marching before he encountered the combinations of William of Orange. At the present day it can only be pronounced a fortunate thing that diplomatists have agreed to use one language, and that the best adapted for their peculiar functions.

DIPLOMATICS, the science derived from the study of ancient diplomas, so called from being written on two leaves, or on double tablets. The Romans used the term more specially for the letters of licence to use the public conveyances provided at the different stations, and generally for public grants. Subsequently it attained a more extended signification, and in more modern times has been used as a general term for ancient imperial and ecclesiastical acts and grants, public treaties, deeds of conveyance, letters, wills, and similar instruments, drawn up in forms and marked with peculiarities varying with their dates and countries. With the revival of literature, the importance of such documents in verifying facts and establishing public and private rights led to their being brought together from the historical works and the monastic registers in which they had been copied, or, in rarer instances, from public and ecclesiastical archives where the originals were still preserved. Then arose questions of authenticity, and doubts of the so-called originals; disputants defended or condemned them; and, in order to establish principles for distinguishing the genuine from the forged, treatises were written on the whole subject of these diplomas. With a view to establish the credit of those preserved in the original, the Benedictine, Dom Mabillon, in the year 1681 produced his masterly work *De re diplomatica*,—Papebroch, the Jesuit, having already, in the year 1675, written his *Propilæum antiquarium circa veri ac falsi discrimen in vetustis membranis* in the *Acta Sanctorum*, April, vol. ii. In the following century appeared the *Nouveau Traité de Diplomatique*, by Dom Toustain (who, however, died before the completion of the work) and Dom Tassin, Benedictines of the congregation of St Maur, 6 vols. 4to, 1750–1765, treating of the whole subject of diplomas, and accordingly entering at length into a minute investigation of the peculiarities and characteristics of writing proper to different ages and countries. Thus treatises on the subject of diplomas gave the name of diplomatics to the study of ancient writing, now more properly termed PALÆOGRAPHY, under which it will be separately treated.

Imperial decrees and privileges, public acts and treaties, and, no doubt, contracts between private persons, were in remote times inscribed on marble and stone, on wood and on metal. The wonderfully preserved monuments of ancient Nineveh show the prevalent use of sun-burnt brick. In Egypt papyrus was used from the remotest times. The Greeks and Romans recorded public documents on wooden tablets, on stone, bronze, lead, and ivory, as well as on papyrus, parchment, and other substances. Tablets of wax served for letters and writings of various kinds, but must have been unsuitable for public acts. Pliny speaks of the use of rolls of lead and of linen. There are many Greek documents preserved in the British Museum, the Bibliothèque Nationale of Paris, and elsewhere, such as royal letters, petitions, contracts, and wills, of the time of the Ptolemies, written on papyrus. See *Notices et Extraits des Manuscrits*, tome xviii., with plates. The Byzantine emperors often used golden and coloured inks from the 8th to the 12th century.

We know that archives were provided by the Romans for the preservation of their public acts; but fire and war have been the great destroyers of these documents so precious to the historian. Suetonius relates that Vespasian undertook to restore from copies 3000 brazen tablets, containing most ancient records, dating almost from the beginning of the republic, which had been consumed when the Capitol was burnt. Original documents of the nature of diplomas, written in Latin, are now not forthcoming of an earlier period than the 5th century. The acts emanating from royal authority anterior to the 13th century are almost exclusively derived from ecclesiastical archives, and consist of foundations of monasteries, and grants of property, privileges, and immunities. In England, from the 13th century they are systematically registered in the royal chancery; the series of rolls in which they are written, under different classes, is very complete from the reign of King John. History is greatly indebted to the care with which religious houses registered their title deeds. From an early time it was their practise to copy them into volumes, arranging them generally under the name of the property. Chartularies of this character of the 10th century are still extant. The chartulary of Winchester Abbey, compiled early in the 12th century, and containing numerous documents of the time before the Conquest, is in the British Museum.

Imperial acts affecting the state at large were proclaimed through the governors of provinces; as in later times, in England royal writs and ordinances were addressed to the sheriffs of the several counties. In England, it would seem, when the object was to appeal to the people, the document was publicly exhibited. When Edward III. landed, as Prince of Wales, on the Yorkshire coast, with the design of overthrowing his father's government, he drew up a manifesto of his purposes, addressed to the citizens of London, who exhibited it on the cross in the Cheap, placing copies in their windows (*Chron. Monasterii de Melsa.*)

At all times diplomas have been drawn very much in set forms. The Romans employed official clerks, (*scribæ*, assigning them to the different magistrates. Under the empire they are called *tabelliones*, and act as public notaries. After the breaking up of the Roman empire, there was a period when the chanceries of the new states were imperfectly served. The notarial science was partially lost, and, in the general neglect of learning, the composing a public act or private document was a task of difficulty. In the 7th century the monk Marculfus composed a formulary for guidance in drawing up documents of various kinds. It was first published by Bignon in 1613. In Migne's edition, *Patrologiæ Cursus*, vol. xxxvii., it is accompanied with several anonymous compilations of the same character. In the 12th and 13th centuries we meet with works of the same kind under the title of *de arte dictaminum*. A very interesting collection of precedents of royal warrants, state letters, papal bulls, and other documents, arranged under many heads of subjects, was compiled by the English poet Occleve, while he was a clerk in the council office at the beginning of the 15th century, and is now in the British Museum. We are best able to understand the nature of

early diplomas by examining the originals, still extant, on papyrus or parchment, which go back in date to the 5th century. The oldest come chiefly from Ravenna. They have been commented on by Maffei in his *Istoria diplomatica*, 1727, and printed in full with facsimiles in the *Papiri diplomatici* of the Abbate Marino-Marini, 1805. A considerable number of the original diplomas of the Merovingian and succeeding sovereigns of France have also been preserved, and have been published in facsimile (Letronne, *Diplomata et Chartæ*), and in letterpress. England also can boast of a series of very beautifully written royal charters from the 7th century. The larger number of them are in the British Museum, and are in course of publication in facsimile (*Facsimiles of Ancient Charters*, parts i. ii. iii.). Many original papal bulls, too, of an early date, are still extant, in different repositories.

There is a general uniformity in the diplomas of the earlier times. Taking the French series as examples, we find a regularity of formulas in the following order :—

1. An invocation, as *In nomine domini Dei Salvatoris nostri Jesu Christi*.

2. The name and style of the sovereign, and the name and title of the person addressed. In the 6th, 7th, and 8th centuries, the style of the French kings was in general *N. Francorum rex, vir inluster*; Pepin added *Dei Gratia*. From the time of Louis le Débonnaire the form was *Divina ordinante* (or *propitiante, annuente*, or *favente*) *providentia* (*clementia*, or *miserioordia*). Popes called themselves simply bishop until the end of the 11th century, when, or only rarely before, they used the title *Papa*. Gregory the Great (590–604) introduced the form *servus servorum Dei*. They placed their name before or after that of the person addressed indifferently, before the 10th century, when the custom prevailed to give it precedence.

3. A preamble, consisting of a moral or religious reflexion, or a recital of the motives to the grant. In the earlier times the moral sentiment is expressed briefly, as *Memor finis mei*, or *Pœnas inferni cupiens effugere*; but later on it is often of great length and in inflated language, with admixture of barbarized Greek words.

4. The substance of the act or donation.

5. A protecting clause, in the nature of an imprecation on such as should infringe the privilege granted, or thwart the object of the act. It is first met with in papal bulls of the 6th century, and appears in an exaggerated form in a later time, the bitterest curses being heaped on the hypothetical offender without measure. The papal type is closely followed in French and English diplomas. In the 12th century it took a milder form, as in papal bulls, *Nulli ergo hominum liceat*, &c. In the 10th and 11th centuries the comminatory clause was often placed after the date, having sometimes been previously introduced into the text.

6. The Merovingian sovereigns authenticated their diplomas by the addition of their signature. Those who were unable to write signed with their monogram. The Carlovingians signed with a monogram, and the same form prevailed from the 9th century in Germany and Italy. It ceased to be used in France in the 14th century. The clergy adopted the use of the monogram in the 11th and 12th centuries. It is not found in the charters of English sovereigns. In the earlier times the monogram was formed of letters of tall cursive character; capitals and uncials were afterwards more commonly used. Sometimes the word *rex* was added. It is possible that the monogram was in some instances entered by the hand of the sovereign, for so much is indicated by the words in which it is introduced, but it was usually added by the chancellor or scribe. It was not used for some kinds of documents, as judgments, decrees, and mandates. In acts of the later Roman emperors, the form of subscription is simply the word *Legi*, with a cross prefixed, as in a diploma of Valentinian, printed by Marini, p. 94. The name of the referendary or chancellor, with the expression *optulit*, was in France, in the earliest time, inserted before, subsequently after, the subscription of the monarch. A paraph of the word *subscripsi*, and often tironian notes, accompanied the subscriptions. Sometimes in royal diplomas, and commonly in private charters, the names of several witnesses were subscribed, each preceded by the word *signum*, with a cross, or followed by *subscripsi*. The popes, in their bulls, originally used the form of *Bene valete*, or *Deus te incolumem servet*, in place of subscription of their name, which they applied only to synodal and other public acts. At the beginning of the 9th century they used their monogram. In the 14th century they signed with their own hand. In the 9th century also began the practice of adding the subscriptions of cardinals, but it was not commonly followed until the middle of the 12th century. Sentences from the Scriptures were used by popes for a signature, instead of their names, in consistorial bulls in the 11th century. English kings, before the Conquest, neither signed their name nor used a monogram. They affixed the sign of the cross—the scribe adding *Signum manus N. regis*, or variations of the form.

7. Dating clause. In France, this followed the subscription and attestation. The manner of dating varied at different times, and in different countries. In diplomas of the emperors, the year is not expressed. For example, an act of Valentinian of about 480 A.D. has simply the words, *Dat. sexto idus Januarii, Ravennæ. + Legi.* The Merovingian kings and their successors dated by their regnal years, adding the day of the month, the place, and generally the word *feliciter*. Some dated from epochs in their reign, as Louis le Débonnaire from Easter 781, the day of his coronation at Rome; from September 813, when he was associated in the imperial power; and from the 28th of January 814, the day of his accession after the death of Charlemagne.

The year of the incarnation was seldom used by the French kings before the end of the 9th century. In England it was generally added to royal charters in the times preceding the Conquest, but, subsequently to the death of William the Conqueror, was very rarely used in public or private deeds until the 13th century. The English charters of the early period often added also the regnal year and papal indiction. In papal bulls the date was given by the names of consuls from 385 to 546; by years of the Greek emperors from 550 to 772; by years of emperors of the west from 802 to 1047, and in 1111; and by years of the pontificate as early as the year 781, but often still by the year of the emperor, or by both together, eventually by the year of the pontificate alone. The year of the incarnation is found in bulls as early as the 7th century, and came into ordinary use in 968. Up to 1088, in the papal dominions, the year was calculated from the 25th of December; subsequently the Florentine and Pisan years were used, the former beginning three months after the nativity, the other nine months before it. The indiction was also added :—from 584 to 1087, that of Constantinople, beginning on the 1st of September; afterwards the Constantinian, or Cæsarean, beginning on the 25th of September, and the Papal, beginning on the 1st of January. These dates were accumulated principally in the bulls; in the briefs the year is rarely designated from 1086 to 1124, and is always wanting from 1124 to 1187. (See Jaffé, *Regesta Pontificum Romanorum.*)

An additional security was given to diplomas by the seal,—the antiquity (going back to remotest ages), the form, colour, substance, and use of which are treated of at great length in works on diplomatics (see SEALS). It was in use by the popes from the earliest time, and under the Merovingian kings and their successors; but by the great feudatories only from the 10th century. In England it is not found during the Saxon period, saving in a few instances in the reign of Edward the Confessor. The use of it came in with the Conquest and became general. The popes' seals were of lead, or in rare instances of gold, and suspended to the document. The precious material was introduced by Charlemagne, and was freely employed by the emperors of Constantinople, who with their principal officers used metal seals. In France, under the Merovingians, and elsewhere at the same period, the seal was of white wax, fixed "en placard," or to the surface of the document. From the 10th century, it was suspended, first by a parchment label, afterwards by cords of silk or other substances. The colour of the cords by which papal *bullæ* were attached varies under different pontiffs. White wax, but of various qualities, was in use to the 13th century, in which and subsequently it was coloured chiefly yellow, red, or green. The quality of the wax, the shape, the legend or inscription, the character of the charge or device—which was sometimes the impression of an antique gem—all these change with the progress of time and become evidence of age.

English charters of the Saxon period have forms in many respects different from those of foreign diplomas. Variations have been already noticed, as, that the king signed neither with his name nor with his monogram, but only with a cross, and that they were dated from the incarnation. It would appear, indeed, that the charters were not drawn up by an officer of the chancery, as in France, but were composed and written by ecclesiastics, whose services were employed for the occasion. In the grant of the monastery of Reculver to Christ Church, Canterbury, by King Eadred, in the year 949, to which Dunstan, then abbot of Glastonbury, and one of the king's principal ministers is a witness, he states that he both drew up the form and wrote the document with his own hand. It is on this account that we find in English charters before the Conquest a variety of styles of writing, even in those of the same date; whereas on the Continent the writing is uniform in the several states. In the absence of a strictly official character, the grant was attested by numerous witnesses, varying from four or five, the more ordinary number in the earlier times, to from 30 to 100 subsequently. For it was always an object with the religious houses in whose favour a grant was made to fortify its authority and secure its recognition by impressive solemnities. They made the benefaction a religious act by inviting the grantor to offer the charter to God on the altar of their church; and they obtained the approval and attestations of the members of the court, or of the council over which the king might be at the time presiding. The names which are subscribed to the English charters add greatly to their historical value. A difference in another respect from the foreign types is attended with advantage to the study of both the language and manners of the time. The property conveyed was defined by a minute description of its boundaries, written in English; and, as the documents are dated and can generally be referred to special localities, dialectic differences and the formation of names, with other incidental lights on subjects of antiquity, are preserved. In English charters of as early a date as the 9th century, and from that time onwards, is sometimes found, at the top or the bottom, the upper or lower half of an inscription. It is often the word *chirographum*, but sometimes other words, or merely letters. It was used when it was an object that two parties to a contract should each have a copy of the deed, which accordingly was written in duplicate on one skin; the inscription was written in large letters between the copies, and the skin was then divided. The line of division was at a later period generally indented, and the document was called an indenture. The custom was not introduced into France until the middle of the 11th century.

The practise of forging and falsifying diplomas, ecclesiastical constitutions, and documents of all kinds is traced back to very early times. The laws of the Visigoths of the 7th century enact severe punishments on offenders of this class, as do the *Capitularia* of Charlemagne. The English chronicler Hoveden, under the year 1196, gives an account of wholesale forgeries of papal bulls and briefs by an agent of the archbishop of York. A decretal of Innocent III. (1195–1216) gives rules for detecting fabricated bulls (*Epist.* i. 201, ed. Baluz.). It was so easy to impose upon the ignorance of people, and the temptations to falsify were so great, that we cannot doubt it was done extensively. The science of diplomatics professes to give the power to detect these forgeries. The two concluding books of the *Nouveau Traité de Diplomatique* treat of the subject at great length, but the rules given for distinguishing the true from the false document can only be applied by one who is practically versed in the study. In passing judgment on a professed original, not only the formulas, historical facts, and date have to be tested, but the external features have to be regarded—the material, the ink, the forms of abbreviation and character of writing, and the seal; and the properties and characteristics of these cannot well be learnt from written instruction. They are treated of in works on the general subject of palæography.

In testing the authenticity of diplomas, assistance will be found, in addition to authors already quoted, in the following works :—Germon (Barthélemi), *De veteribus regum Francorum diplomatibus*, Paris 1703–1707, 3 vols. 12mo; Muratori, *De diplomatis et chartis antiquis*; *Antiquit. Ital. medii ævi*, tom. iii.; Raguet, *Hist. des contestations sur la diplomatique*, 12mo, 1708, and 8vo, 1767; Hickes, *De antiquæ litteraturæ septentrionalis utilitate dissertatio epistolaris*, fol. Oxon. 1703; Marino-Marini, *Diplomatica pontificia*, 4to, 1841; Kemble, *Codex Diplomaticus ævi Anglosaxonici*, 6 vols. 8vo, 1839–1848; Quantin, *Dictionnaire raisonné de Diplomatique Chrétienne*, in Migne's *Encyclopédie Théologique*, 1846; *Archives de l'Empire, Monuments Historiques, Cartons des Rois*, ed. J. Tardif, Paris, 4to 1866; *Bibliothèque de l'École des Chartes*, 1839–1875; Gloria, *Compendio di Paleografia e Diplomatica*, 8vo., 1870. (E. A. B.)

DIPPEL, JOHANN CONRAD (1673–1734), a German theologian and alchemist, who assumed as an author the name "Christianus Democritus," was born at the castle of Frankenstein, near Darmstadt, his father being a Lutheran clergyman. He studied at Giessen, where he took the degree of master in philosophy in 1693. After a short visit to Wittenberg he went to Strasburg, where he delivered lectures on astrology and chiromancy, and occasionally preached. He gained considerable popularity, but was obliged after a time to quit the city, owing to his irregular manner of living, and the suspicion attaching to him of having been concerned in a murder. He had up to this time espoused the cause of the orthodox as against the pietists, and had justified his gay and worldly habits on the ground that he intended to make a practical protest against pietism; but in his two first published works, *Orthodoxia Orthodoxorum* (1697) and *Papismus vapulans Protestantium* (1698), he assailed vehemently the fundamental positions of the Lutheran theology, denying the inspiration of Scripture, the efficacy of the sacraments, and the doctrine of justification by faith. He held that religion consisted not in dogma but exclusively in love and self-sacrifice. To avoid persecution he was compelled to wander from place to place, and he resided successively in various towns of Germany, Holland, Denmark, and Sweden. He took the degree of doctor of medicine at Leyden in 1711. From 1698 he devoted himself to experiments in alchemy, which wasted a considerable fortune, and he was frequently imprisoned for debt. He made several valuable discoveries in chemistry, one being Prussian blue, and another an oil, still known as Dippel's animal oil, which he offered as a panacea, and which has useful medicinal properties of a more limited kind. Provoked by false reports of his death, he published in 1733 an intimation that he would live until 1808. In spite of this, however, he died at Berleburg on the 25th April 1734.

An enlarged edition of Dippel's collected works was published at Berleburg in 1743. See a somewhat too eulogistic biography by Ackermann (Leipsic, 1781), and a memoir by Büchner in the *Historisches Taschenbuch* for 1858.

DIPSOMANIA. See MENTAL DISEASES.

DIPTERA (Aristotle, from δι, double, and πτερα, wings), an Order of the *Insecta*, containing the "flies," properly so called, with which, also, in spite of not possessing its chief characteristic, the sub-order *Aphaniptera* (fleas), a part of the obsolete *Aptera*, is now incorporated. The *Diptera* proper (with the exception of the apterous *Nycteribiidæ*, and a few aberrant species of other families, to which the majority of the characters given will not strictly apply, but which cannot, from their general structure, meta-

morphoses, habits, or evident natural affinities, be separated from the Order under consideration) have the following characters:—wings two, mesothoracic, membranous, mostly horizontal and transparent, not capable of being folded, with nervures generally few and longitudinally disposed, and having a pair of alulets at the base; metathoracic wings replaced by a pair of halteres or balancers; mouth antliate (whence the Fabrician name *Antliata* for the Order), with a proboscis formed of the labium, inclosing modifications of other usual parts of the mouth, except of the labial palpi, which are wanting; tarsi 5-jointed; prothorax reduced to a very small collar. They are divided into two sections—the ORTHORHAPHA, in which the pupa is incomplete (the details of the future perfect insect being visible), and the CYCLORHAPHA, in which the pupa is coarctate (of a hard, uniform surface, cylindrical, rounded at the extremities). The ORTHORHAPHA are again divided into two sub-sections—the *Nematocera* (antennæ composed of more than 6 joints, palpi 4- or 5-jointed), and the *Brachycera* (antennæ short, with apparently only three distinct joints, palpi 1- or 2-jointed). Of these, the *Nematocera* comprise three tribes, viz.:—1, the *Oligoneura*, in which the wings have very few nerves (fam. *Cecidomyiidæ*); 2, the *Eucephala*, in which the larva has a distinct head (fams. *Mycetophilidæ*, *Bibionidæ*, *Rhyphidæ*, *Simuliidæ*, *Chironomidæ*, *Culicidæ*, and *Psychodidæ*); and 3, the *Polyneura*, in which the wings have many veins (fam. *Tipulidæ*). The *Brachycera* also comprise three tribes, viz.:—1, the *Cyclocera*, in which the third joint of the antennæ is annulated (divided into two groups—*a*, *Notacantha*, = fams. *Stratiomyiidæ*, *Xylophagidæ*, and *Acanthomeridæ*; and *b*, *Tanystoma*, = fams. *Tabanidæ* and *Leptidæ*); 2, the *Orthocera*, in which the antennæ are normal (divided into two groups—*c*, *Polytoma*, = fams. *Therevidæ* and *Scenopinidæ*; and *d*, *Procephala*, = fams. *Acroceridæ*, *Bombyliidæ*, *Nemestrinidæ*, *Mydasidæ*, *Asilidæ*, *Empidæ*, and *Dolichopodidæ*), and 3, the *Acroptera*, in which the wings are pointed (fam. *Lonchopteridæ*). The CYCLORHAPHA in like manner are divided into two sub-sections—the *Proboscidea*, possessing a proboscis, and the larvæ having an œsophageal frame; and the *Eproboscidea* (also variously termed *Coriacea* or *Pupipara*), in which the proboscis is wanting, the body leathery, and the larvæ have no œsophageal frame. Of these, the *Proboscidea* comprise three tribes, viz.:—1, the *Hypocera*, in which the antennæ are inserted quite close to the mouth (fam. *Phoridæ*); 2, the *Pseudoneura*, in which the wings have a false longitudinal veinlet (fam. *Syrphidæ*); and 3, the *Eumyiidæ*, or type flies (fams. *Pipunculidæ*, *Platypezidæ*, *Conopidæ*, *Muscidæ*, and *Œstridæ*). The *Eproboscidea* comprise three families, all parasitic,—the *Hippoboscidæ*, *Nycteribiidæ*, and *Streblidæ*, the latter a very limited and aberrant group stated to be oviparous, and having the wings distinct and well veined, unlike the *Nycteribiidæ*.

The sub-order *Aphaniptera* consists of two families only, the *Pulicidæ* and *Platypsyllidæ* (the latter so peculiar in structure as to have been claimed for the *Coleoptera*). Its members are parasitic, entirely coriaceous, much compressed or flattened, and destitute of wings or balancers, these organs being represented by more or less obsolete leathery plates; they have 3- or 4-jointed antennæ, 4-jointed maxillary and 3-jointed labial palpi, and 5-jointed tarsi. The larvæ of such of them as are known are vermiform, and the pupæ inactive, incomplete. If not considered as a sub-order, these two families would apparently have to be placed at the head of the Eucephalous *Nematocera*,—in that case, of course, deranging the characters given for that tribe.

Other families of the *Diptera* have been proposed, but need not be here noticed, being as yet scarcely established, or merely entitled to the rank of sub-families (the *Muscidæ* especially comprising many of the latter).

The *Diptera*, in number of species and individuals (very many having swarming propensities), have been considered to be the order of animated beings most diffused over the globe; and the extremes of heat and cold seem alike indifferent to them. They have long been known to abound in very high latitudes; and, among the insects brought back by Captain Feilden, the naturalist attached to Sir George Nares's Arctic expedition, were Dipterous species of apparently the most feeble organism. The Rev. A. E. Eaton, attached as naturalist to the late "Transit of Venus" expedition, discovered also, on the desolate shores of Kerguelen's Island, *Diptera* of a degraded type suitable to the climatic peculiarities of the locality. Tropical countries naturally furnish the most developed and in some cases extraordinary forms,—the genera *Pangonia*, *Rhopalomera*, *Achias*, *Diopsis*, and *Elaphomyia*, and various *Acroceridæ* (even in temperate regions) abounding in instances of exaggerated and apparently unnatural structure. To a geographical distribution of the widest extent, the flies add a range of habits of the most diversified nature; they are both animal and vegetable feeders, an enormous number of their species acting as scavengers in consuming putrescent or decomposing matter of both kinds. The phytophagous species are attached to various parts of the plant, dead or alive; and the carnivorous in like manner feed on dead or living flesh, many being parasitic on living animals of various classes (even *Reptilia*, as a fly is parasitic upon frogs in Australia), and more especially upon other insects, including *Hymenoptera*, of which they frequently simulate the external facies. No reasonable approximation can be made to the number of existing species, as the *Diptera* are not collected or examined with the same assiduity as the more attractive orders. Schiner, however, in 1868, stated the number then recorded to be no less than 20,800, to which a considerable annual increase is being made (*e.g.*, 550 species in 1869, and 230 in 1875); and more than 4000 different genera have been found necessary for their reception. These must be nevertheless taken as vastly below the mark of existent species. No catalogue of the British species has recently been made; Westwood, in 1840, enumerated about 2350.

Considered in relation to man, there would seem to be sufficient reason for placing this apparently feeble order at the head of our insect enemies. Allowing for the good effected by the clearing away of animal and vegetable impurities by many species, and for the indirect advantage caused by the known instances of a few others assisting in the fecundation of plants, there remains a long list of direct injuries effected by *Diptera*. Without laying undue stress upon the formation of galls and other vegetable deteriorations caused by many species, there can be no doubt that the destruction of grass-lands by the larva of the crane-fly, or "Daddy Long-Legs" (*Tipula oleracea*), of olive-crops by *Dacus*, of oranges by *Ceratitis*, of various culinary plants by *Psila*, *Tephritis*, *Anthomyia*, *Phytomyza*, *Drosophila*, &c., and of wheat and other crops by the "Hessian fly," *Oscinis*, and *Chlorops*, are of very serious consequence. Our domestic animals, moreover, suffer from the bot-flies (*Œstrus*, *Gasterophilus*, and *Cephenemyia*), the tick (*Melophagus*), gad-flies (*Tabanus*, *Hæmatopota*, *Chrysops*, and *Stomoxys*, many of which attack man himself), and last, and most dreaded, the African "Zimb," or "Tsetse," *Glossina morsitans*, which is of sufficient power to close the exploration of a region in which it occurs. Nor is man himself spared; the petty inconveniences of wasted food, broken rest, and slight personal pain or irritation experienced in temperate regions from fly-larvæ, gnats, midges, &c., and the parasitic species, are aggravated in both warmer and more boreal countries to a dangerous extent, and have even been found prejudicial to life. There are many recorded instances of the larvæ of *Diptera* feeding upon the human intestinal canal, and of species (dubiously referred to *Œstrus*) attacking man; as also of loathsome cases of individuals being eaten alive by the larvæ of flies, developed in food secreted about the persons of beggars. Various cases have, moreover, recently been noted of the diffusion of the germs of disease by flies; and instances of death from transference of putrid animal matter in New Caledonia have also been recorded. One of the *Muscidæ*, *Lucilia hominivoraæ*, is known to have caused considerable destruction to human life among French convicts in Cayenne, laying its eggs in the mouth or nostrils during sleep; and a very precise account of much disease and death in man and domestic animals at Mohilew, by a similar action of another of the same family, *Sarcophila wohlfarti*, has recently been given by Portchinsky, a Russian naturalist. It is perhaps superfluous to speak of mosquitoes, too well known since the Biblical "plague of flies;" but it may be observed that the corresponding plague of sand-flies, *Simulium*, so well known to affect the eyes of sufferers from ophthalmia in Egypt, has made its appearance in the deserts of West Australia, where the last exploring expedition of Mr Ernest Giles suffered severely from it.

The antiquity of the fly is scarcely more than historical. Very few fossil species are known (5 only being recorded from the Solenhofen lithographic Oolite); but the more recent "flies in amber" are so constantly found that the expression has become a common proverb. (E. C. R.)

DIPTYCH, a double tablet made with a hinge to open and shut. Diptychs were used in the time of the Roman empire for sending letters—"mainly love letters," says Facciolati, quoting the scholiast to Juvenal ix. 36, whose note does not, however, seem to imply as much. The consuls and quæstors used, on assuming office, to send diptychs containing their names and portraits to their friends. The exterior of the leaves was often ornamented with other paintings. The tablets were made, the more ordinary kind of boxwood or maple, the richer sort of cedar, of ivory, of silver, and sometimes even of gold. They were very frequently sent by friends to each other as presents at the beginning of a new year. The early Christians used tablets thus made in the celebration of divine worship. And Cardinal Noris (*Dissertat. de Hist. Synod.*) expends much learning in showing, what is very evident, that the Christians adopted the use of them from that of the consular diptychs. They were placed on the "ambones,"—the pulpits, or reading desks, which may still be seen in ancient basilicas at the west end of the choir or presbytery; and from them were read to the congregation of the faithful the names of the celebrating priests, of those who occupied the superior positions in the Christian hierarchy, of the saints, martyrs, and confessors, and, in process of time, also of those who had died in the faith. It is the diptychs that are referred to by the early Christian writers under the names of "mystic tablets," "anniversary books," "matriculation registers" of the church, and sometimes "books of the living," or "books of life." The word is also occasionally found used in other senses, *e.g.* for the priest's vestment, which was usually folded in two (see Ducange, *ad voc.*) When it became customary to write in the diptychs names so numerous as those of the different classes of persons above mentioned, it will be easily understood that it became impossible to inscribe them on two tablets of convenient size. Hence the diptychs became triptychs, *i.e.*, consisting of three such conjoined tablets. But, though triptychs are often spoken of in the art-language of a later time, these were by the early church writers still called diptychs; and continued to be so-called, even when many leaves, probably of parchment in some cases, though more frequently of wood, were introduced between the two original folds of the diptych, thus forming a veritable *book*. The inscription on the diptychs of deaths and baptisms, naturally led to the insertion of *dates*, and the diptychs seem thus to have grown into calendars, and to have been the germ from which necrologies, lists of saints, and almanacs have been developed. Much doubt exists as to the time when the use of diptychs to read from died out in the church. The best opinion seems to be that their use lasted to about the end of the 8th century. The outsides of the diptych folds being often very richly ornamented, their preservation was carefully attended to, and even those which were ornamented with profane paintings or carvings were often to be found in use in the primitive churches. This ornamentation caused the diptychs to be exhibited to the congregation, and used as adornments for the altar. And in this position, by a natural process of development, the ornamentation became the main end and object of the thing itself. The best painters of the time employed their talents in painting them—generally in the form of triptychs, and on both sides of the folding doors, so that the triptych when closed showed two subjects, often the portraits of the donor and his wife, and when open three paintings;—hence the very large number of diptychs and triptychs which are found in our museums and galleries.

See Bingham, *Orig. Eccles.*, lib. xv. ch. 13, sec. 18, and Moroni, *Erudizione Storica-Ecclesiastica*.

DIRCE, in Greek legend, the personification of a fountain (and stream) at Thebes, from the water of which Hercules derived part of his strength, and which was usually identified with the fountain of Ares in the legend of Cadmus. Besides, the fountain was the grave of Dirce, at which sacrifices for the dead and other rites were performed. According to the legend, Dirce, the wife of Lycus, king of Thebes, had sorely persecuted Antiope, who at last escaped to Mount Cithæron, where her twin sons Amphion and Zethus were being brought up by a herdsman unconscious of their parentage. Mother and sons met, but had not recognized each other, till Dirce, who had come to the hill for a Dionysiac ceremony, proposed that Amphion and Zethus should tie Antiope to the horns of a wild bull to be dragged to death. They were about to do this when the herdsman announced their relationship, and they then tied Dirce to the bull instead. She was dragged by it over the hill to the fountain into which she was transformed.

DIRSCHAU, in Polish *Szczevo*, a town of Prussia, in the government of Dantzic and district of Stargard, on the left bank of the Vistula, at a railway junction about twenty miles S.S.E. of Dantzic. Besides dealing in wood and cattle, it displays considerable industrial activity in the manufacture of agricultural implements, iron and tin wares, and cement; but its principal claim to attention is the lattice-work iron bridge, thrown across the river in 1850–1857, which, with its total length of 2726 feet and its six spans of 410 feet each, is a noble testimony to the engineering skill of Lentze and Schinz, and affords a passage for the railway between Königsberg and Berlin, for two ordinary carriage roads, and two sideways for foot passengers. Unfortunately, as it lies only about 12 feet above the highest level attained by the river, and there is no opening for the passage of ships, it is necessary in passing under it to remove or drop the masts. J. Forster, the traveller, was born at Dirschau in 1729. Population in 1875, 9727.