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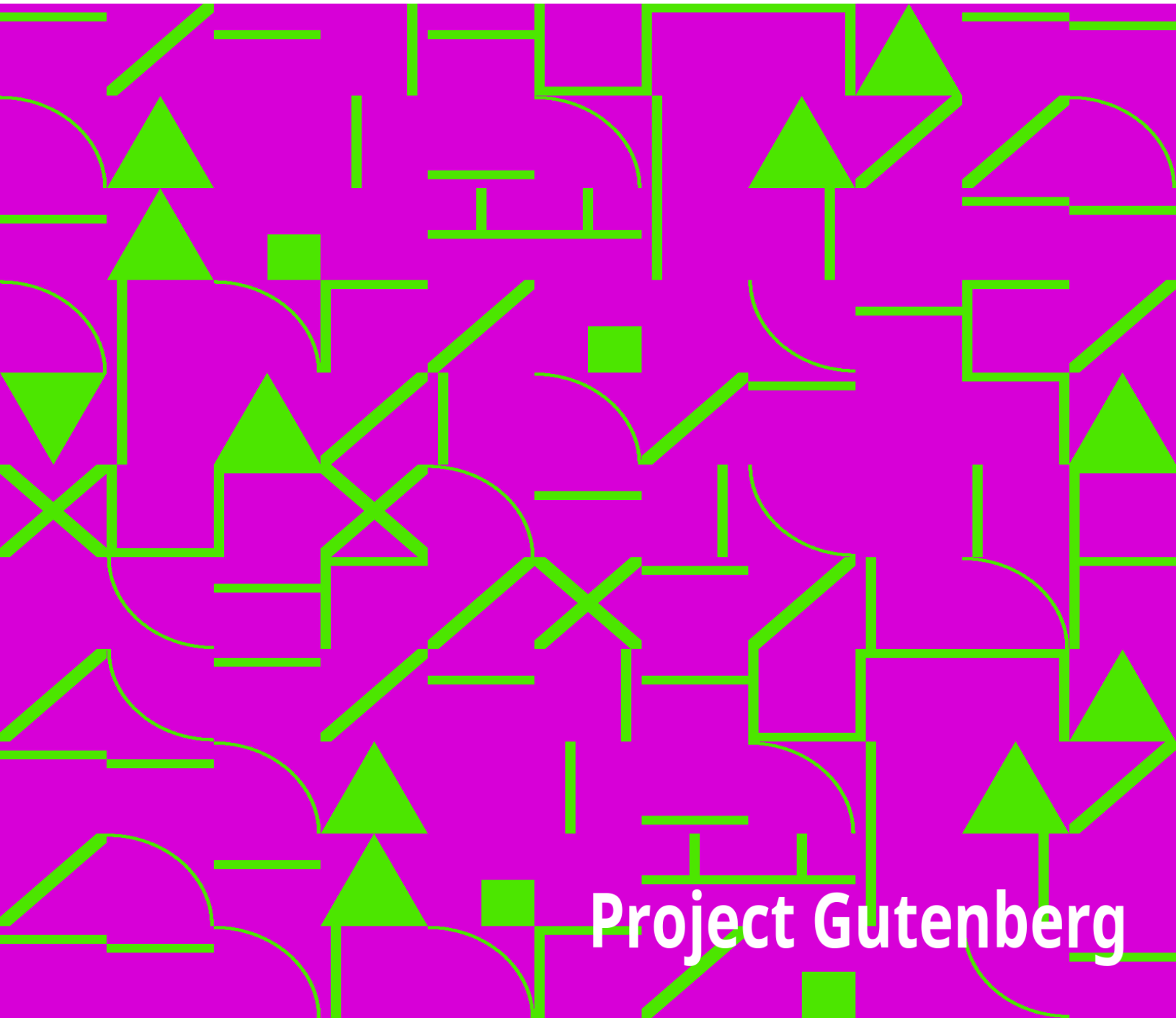

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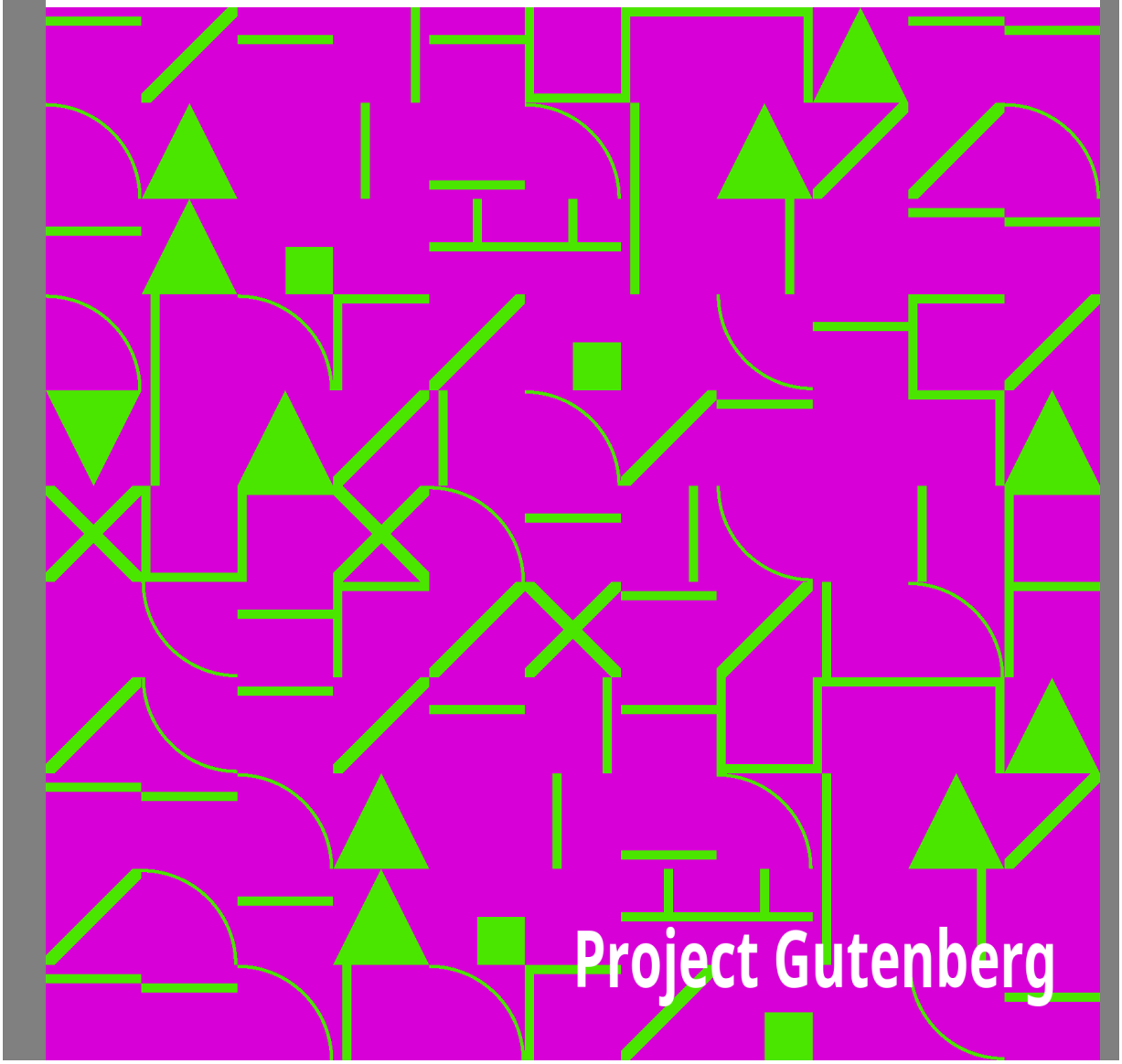

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THE ENCYCLOPÆDIA BRITANNICA

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ELEVENTH EDITION

VOLUME VII slice II

Constantine Pavlovich to Convention

CONSTANTINE PAVLOVICH (1779-1831), grand-duke and cesarevich of Russia, was born at Tsarskoye Selo on the 27th of April 1779. Of the sons born to the unfortunate tsar Paul Petrovich and his wife Maria Feodorovna, *née* princess of Württemberg, none more closely resembled his father in bodily and mental characteristics than did the second, Constantine Pavlovich. The direction of the boy's upbringing was entirely in the hands of his grandmother, the empress Catherine II. As in the case of her eldest grandson (afterwards the emperor Alexander I.), she regulated every detail of his physical and mental education; but in accordance with her usual custom she left the carrying out of her views to the men who were in her confidence. Count Nicolai Ivanovich Soltikov was supposed to be the actual tutor, but he too in his turn transferred the burden to another, only interfering personally on quite exceptional occasions, and exercised neither a positive nor a negative influence upon the character of the exceedingly passionate, restless and headstrong boy. The only person who really took him in hand was César La Harpe, who was tutor-in-chief from 1783 to May 1795 and educated both the empress's grandsons.

Like Alexander, Constantine was married by Catherine when not yet seventeen years of age, a raw and immature boy, and he made his wife, Juliana of Coburg, intensely miserable. After a first separation in the year 1799, she went back permanently to her German home in 1801, the victim of a frivolous intrigue, in the guilt of which she was herself involved. An attempt made by Constantine in 1814 to win her back to his hearth and home broke down on her firm opposition. During the time of this tragic marriage Constantine's first campaign took place under the leadership of the great Suvorov. The battle of Bassignano was lost by Constantine's fault, but at Novi he distinguished himself by such personal bravery that the emperor Paul bestowed on him the title of cesarevich, which according to the fundamental law of the constitution belonged only to the heir to the throne. Though it cannot be proved that this action of the tsar denoted any far-reaching plan, it yet shows that Paul already distrusted the grand-duke Alexander. However that may be, it is certain that Constantine never tried to secure the throne. After his father's death he led a wild and disorderly bachelor life. He abstained from politics, but remained faithful to his military inclinations, though, indeed, without manifesting anything more than a preference for the externalities of the service.

In command of the guards during the campaign of 1805 Constantine had a share of the responsibility for the unfortunate turn which events took at the battle of Austerlitz; while in 1807 neither his skill nor his fortune in war

showed any improvement. However, after the peace of Tilsit he became an ardent admirer of the great Corsican and an upholder of the Russo-French alliance. It was on this account that in political questions he did not enjoy the confidence of his imperial brother. To the latter the French alliance had always been merely a means to an end, and after he had satisfied himself at Erfurt, and later during the Franco-Austrian War of 1809, that Napoleon likewise regarded his relation to Russia only from the point of view of political advantage, he became convinced that the alliance must transform itself into a battle of life and death. Such insight was never attained by Constantine; even in 1812, after the fall of Moscow, he pressed for a speedy conclusion of peace with Napoleon, and, like field-marshal Kutusov, he too opposed the policy which carried the war across the Russian frontier to a victorious conclusion upon French soil. During the campaign he was a boon companion of every commanding-officer. Barclay de Tolly was twice obliged to send him away from the army. His share in the battles in Germany and France was insignificant. At Dresden, on the 26th of August, his military knowledge failed him at the decisive moment, but at La Fère-Champenoise he distinguished himself by personal bravery. On the whole he cut no great figure. In Paris the grand-duke excited public ridicule by the manifestation of his petty military fads. His first visit was to the stables, and it was said that he had marching and drilling even in his private rooms.

In the great political decisions of those days Constantine took not the smallest part. His importance in political history dates only from the moment when the emperor Alexander entrusted him in Poland with a task which enabled him to concentrate all the one-sidedness of his talents and all the doggedness of his nature on a definite object: that of the militarization and outward discipline of Poland. With this begins the part played by the grand-duke in history. In the Congress-Poland created by Alexander he received the post of commander-in-chief of the forces of the kingdom; to which was added later (1819) the command of the Lithuanian troops and of those of the Russian provinces that had formerly belonged to the kingdom of Poland. In effect he was the actual ruler of the country, and soon became the most zealous advocate of the separate position of Poland created by the constitution granted by Alexander. He organized their army for the Poles, and felt himself more a Pole than a Russian, especially after his marriage, on the 27th of May 1820, with a Polish lady, Johanna Grudzinska. Connected with this was his renunciation of any claim to the Russian succession, which was formally completed in 1822. It is well known how, in spite of this, when Alexander I. died on the 1st of December 1825 the grand-duke Nicholas had him proclaimed emperor in St Petersburg, in connexion with which occurred the famous revolt of the Russian Liberals, known as the rising of the Dekabrists. In this crisis Constantine's attitude had been very correct, far more so than that of his brother, which was vacillating and uncertain. Under the emperor Nicholas also Constantine maintained his position in Poland. But differences soon arose between him and his brother in consequence of the share taken by the Poles in the Dekabrist conspiracy. Constantine hindered the unveiling of the organized plotting for independence which had been going on in Poland for many years, and held obstinately to the belief that the army and the bureaucracy were loyally devoted to the Russian empire. The eastern policy of the tsar and the Turkish War of 1828 and 1829 caused a fresh breach between them. It was owing to the opposition of Constantine that the Polish army took no part in this war, so that there was in consequence no Russo-Polish comradeship in arms, such as might perhaps have led to a reconciliation between the two nations.

The insurrection at Warsaw in November 1830 took Constantine completely by surprise. It was owing to his utter failure to grasp the situation that the Polish regiments passed over to the revolutionaries; and during the continuance of the revolution he showed himself as incompetent as he was lacking in judgment. Every defeat of the Russians appeared to him almost in the light of a personal gratification: *his* soldiers were victorious. The suppression of the revolution he did not live to see. He died of cholera at Vitebsk on the 27th of June 1831. He was an impossible man in an impossible situation. On the Russian imperial throne he would in all probability have been a tyrant like his father.

See also Karrnovich's *The Cesarevich Constantine Pavlovich* (2 vols., St Petersburg, 1899), (Russian); T. Schiemann's *Geschichte Russlands unter Kaiser Nicolaus I.* vol. i. (Berlin, 1904); Pusyrevski's *The Russo-Polish War of 1831* (2nd ed., St Petersburg, 1890) (Russian).

(T. Se.)

CONSTANTINE, a city of Algeria, capital of the department of the same name, 54 m. by railway S. by W. of the port of Philippeville, in 36° 22′ N., 6° 36′ E. Constantine is the residence of a general commanding a division, of a prefect and other high officials, is the seat of a bishop, and had a population in 1906 of 46,806, of whom 25,312 were Europeans. The population of the commune, which includes the suburbs of Constantine, was 58,435. The city occupies a romantic position on a rocky plateau, cut off on all sides save the west from the surrounding country by a beautiful ravine, through which the river Rummel flows. The plateau is 2130 ft. above sea-level, and from 500 to nearly 1000 ft. above the river bed. The ravine, formed by the Rummel, through erosion of the limestone, varies greatly in width—at its narrowest part the cliffs are only 15 ft. apart, at its broadest the valley is 400 yds. wide. At the N.E. angle of the city the gorge is spanned by an iron bridge (El-Kantara) built in 1863, giving access to the railway station, situated on Mansura hill. A stone bridge built by the Romans, and restored at various times, suddenly gave way in 1857 and is now in ruins; it was built on a natural arch, which, 184 ft. above the level of the river, spans the valley. Along the north-eastern side of the city the Rummel is spanned in all four times by these natural stone arches or tunnels. To the north the city is commanded by the Jebel Mecid, a hill which the French (following the example of the Romans) have fortified.

Constantine is walled, the extant medieval wall having been largely constructed out of Roman material. Through the centre from north to south runs a street (the rue de France) roughly dividing Constantine into two parts. The place du Palais, in which are the palace of the governor and the cathedral, and the kasbah (citadel) are west of the rue de France, as is likewise the place Négrier, containing the law courts. The native town lies chiefly in the south-east part of the city. A striking contrast exists between the Moorish quarter, with its tortuous lanes and Oriental architecture, and the modern quarter, with its rectangular streets and wide open squares, frequently bordered with trees and adorned with fountains. Of the squares the place de Nemours is the centre of the commercial and social life of the city. Of the public buildings those dating from before the French occupation possess chief interest. The palace, built by Ahmed Pasha, the last bey of Constantine, between 1830 and 1836, is one of the finest specimens of Moorish architecture of the 19th century. The kasbah, which occupies the northern corner of the city, dates from Roman times, and preserves in its more modern portions numerous remains of other Roman edifices. It is now turned into barracks and a hospital. The fine mosque of Sidi-el-Kattani (or Salah Bey) dates from the close of the 18th century; that of Suk-er-Rezel, now transformed into a cathedral, and called *Notre-Dame des Sept Douleurs*, was built about a century earlier. The Great Mosque, or Jamaa-el-Kebir, occupies the site of what was probably an ancient pantheon. The mosque Sidi-el-Akhdar has a beautiful minaret nearly 80 ft. high. The museum, housed in the hôtel de ville, contains a fine collection of antiquities, including a famous bronze statuette of the winged figure of Victory, 23 in. high, discovered in the kasbah in 1858.

A religious seminary, or medressa, is maintained in connexion with the Sidi-el-Kattani; and the French support a college and various minor educational establishments for both Arabic and European culture. The native industry of Constantine is chiefly confined to leather goods and woollen fabrics. Some 100,000 burnouses are made annually, the finest partly of wool and partly of silk. There is also an active trade in embossing or engraving copper and

brass utensils. A considerable trade is carried on over a large area by means of railway connexion with Algiers, Bona, Tunis and Biskra, as well as with Philippeville. The railways, however, have taken away from the city its monopoly of the traffic in wheat, though its share in that trade still amounts to from £400,000 to £480,000 a year.

Constantine, or, as it was originally called, Cirta or Kirtha, from the Phoenician word for a city, was in ancient times one of the most important towns of Numidia, and the residence of the kings of the Massyli. Under Micipsa (2nd century B.C.) it reached the height of its prosperity, and was able to furnish an army of 10,000 cavalry and 20,000 infantry. Though it afterwards declined, it still continued an important military post, and is frequently mentioned during successive wars. Caesar having bestowed a part of its territory on his supporter Sittius, the latter introduced a Roman settlement, and the town for a time was known as Colonia Sittianorum. In the war of Maxentius against Alexander, the Numidian usurper, it was laid in ruins; and on its restoration in A.D. 313 by Constantine it received the name which it still retains. It was not captured during the Vandal invasion of Africa, but on the conquest by the Arabians (7th century) it shared the same fate as the surrounding country. Successive Arab dynasties looted it, and many monuments of antiquity suffered (to be finally swept away by "municipal improvements" under the French régime). During the 12th century it was still a place of considerable prosperity; and its commerce was extensive enough to attract the merchants of Pisa, Genoa and Venice. Frequently taken and retaken by the Turks, Constantine finally became under their dominion the seat of a bey, subordinate to the dey of Algiers. To Salah Bey, who ruled from 1770 to 1792, we owe most of the existing Moslem buildings. In 1826 Constantine asserted its independence of the dey of Algiers, and was governed by Haji Ahmed, the choice of the Kabyles. In 1836 the French under Marshal Clausel made an unsuccessful attempt to storm the city, which they attacked by night by way of El-Kantara. The French suffered heavy loss. In 1837 Marshal Valée approached the town by the connecting western isthmus, and succeeded in taking it by assault, though again the French lost heavily. Ahmed, however, escaped and maintained his independence in the Aures mountains. He submitted to the French in 1848 and died in 1850.

CONSTANTINOPLE, the capital of the Turkish empire, situated in 41° 0′ 16″ N. and 28° 58′ 14″ E. The city stands at the southern extremity of the Bosporus, upon a hilly promontory that runs out from the European or western side of the straits towards the opposite Asiatic bank, as though to stem the rush of waters from the Black Sea into the Sea of Marmora. Thus the promontory has the latter sea on the south, and the bay of the Bosporus, forming the magnificent harbour known as the Golden Horn, some 4 m. long, on the north. Two streams, the Cydaris and Barbysus of ancient days, the Ali-Bey-Su and Kiahat-Hané-Su of modern times, enter the bay at its north-western end. A small winter stream, named the Lycus, that flows through the promontory from west to south-east into the Sea of Marmora, breaks the hilly ground into two great masses,—a long ridge, divided by cross-valleys into six eminences, overhanging the Golden Horn, and a large isolated hill constituting the south-western portion of the territory. Hence the claim of Constantinople to be enthroned, like Rome, upon seven hills. The 1st hill is distinguished by the Seraglio, St Sophia and the Hippodrome; the 2nd by the column of Constantine and the mosque Nuri-Osmanieh; the 3rd by the war office, the Seraskereate Tower and the mosque of Sultan Suleiman; the 4th by the mosque of Sultan Mahommed II., the Conqueror; the 5th by the mosque of Sultan Selim; the 6th by Tekfour Serai and the quarter of Egri Kapu; the 7th by Avret Tash and the quarter of Psamatia. In Byzantine times the two last hills were named respectively the hill of Blachernae and the Xerolophos or dry hill.

History, Architecture and Antiquities.—Constantinople is famous in history, first as the capital of the Roman empire in the East for more than eleven centuries (330-1453), and secondly as the capital of the Ottoman empire since 1453. In respect of influence over the course of human affairs, its only rivals are Athens, Rome and Jerusalem. Yet even the gifts of these rivals to the cause of civilization often bear the image and superscription of Constantinople upon them. Roman law, Greek literature, the theology of the Christian church, for example, are intimately associated with the history of the city beside the Bosporus.

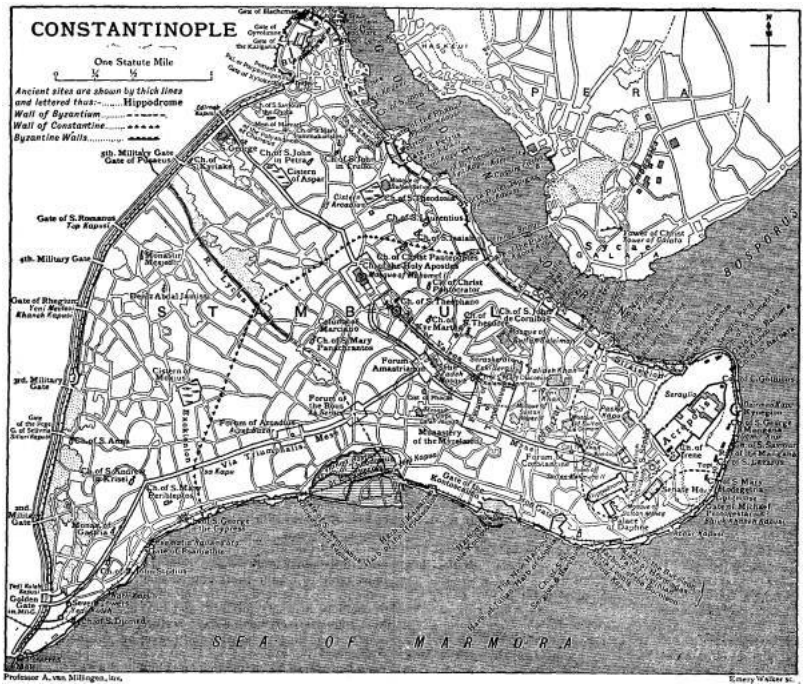
The city was founded by Constantine the Great, through the enlargement of the old town of Byzantium, in A.D. 328, and was inaugurated as a new seat of government on the 11th of May, A.D. 330. To indicate its political dignity, it was named New Rome, while to perpetuate the fame of its founder it was styled Constantinople. The chief patriarch of the Greek church still signs himself "archbishop of Constantinople, New Rome." The old name of the place, Byzantium, however, continued in use.

The creation of a new capital by Constantine was not an act of personal caprice or individual judgment. It was the result of causes long in operation, and had been foreshadowed, forty years before, in the policy of Diocletian. After the senate and people of Rome had ceased to be the sovereigns of the Roman world, and their authority had been vested in the sole person of the emperor, the eternal city could no longer claim to be the rightful throne of the state. That honour could henceforth be conferred upon any place in the Roman world which might suit the convenience of the emperor, or serve more efficiently the interests he had to guard. Furthermore, the empire was now upon its defence. Dreams of conquests and extension had long been abandoned, and the pressing question of the time was how to repel the persistent assaults of Persia and the barbarians upon the frontiers of the realm, and so retain the dominion inherited from the valour of the past. The size of the empire made it difficult, if not impossible, to attend to these assaults, or to control the ambition of successful generals, from one centre. Then the East had grown in political importance, both as the scene of the most active life in the state and as the portion of the empire most exposed to attack. Hence the famous scheme of Diocletian to divide the burden of government between four colleagues, in order to secure a better administration of civil and of military affairs. It was a scheme, however, that lowered the prestige of Rome, for it involved four distinct seats of government, among which, as the event proved, no place was found for the ancient capital of the Roman world. It also declared the high position of the East, by the selection of Nicomedia in Asia Minor as the residence of Diocletian himself. When Constantine, therefore, established a new seat of government at Byzantium, he adopted a policy inaugurated before his day as essential to the preservation of the Roman dominion. He can claim originality only in his choice of the particular point at which that seat was placed, and in his recognition of the fact that his alliance with the Christian church could be best maintained in a new atmosphere.

But whatever view may be taken of the policy which divided the government of the empire, there can be no dispute as to the wisdom displayed in the selection of the site for a new imperial throne, "Of all the events of Constantine's life," says Dean Stanley, "this choice is the most convincing and enduring proof of his real genius." Situated where Europe and Asia are parted by a channel never more than 5 m. across, and sometimes less than half a mile wide, placed at a point commanding the great waterway between the Mediterranean and the Black Sea, the position affords immense scope for commercial enterprise and political action in rich and varied regions of the world. The least a city in that situation can claim as its appropriate sphere of influence is the vast domain extending from the Adriatic to the Persian Gulf, and from the Danube to the eastern Mediterranean. Moreover, the site constituted a natural citadel, difficult to approach or to invest, and an almost impregnable refuge in the hour of defeat, within which broken forces might rally to retrieve disaster. To surround it, an enemy required to be strong upon both land and sea. Foes advancing through Asia Minor would have their march arrested, and their blows kept beyond striking distance, by the moat which the waters of the Bosporus, the Sea of Marmora and the Dardanelles combine to form. The narrow straits in which the waterway connecting the Mediterranean with the Black Sea

contracts, both to the north and to the south of the city, could be rendered impassable to hostile fleets approaching from either direction, while on the landward side the line of defence was so short that it could be strongly fortified, and held against large numbers by a comparatively small force. Nature, indeed, cannot relieve men of their duty to be wise and brave, but, in the marvellous configuration of land and sea about Constantinople, nature has done her utmost to enable human skill and courage to establish there the splendid and stable throne of a great empire.

Byzantium, out of which Constantinople sprang, was a small, well-fortified town, occupying most of the territory comprised in the two hills nearest the head of the promontory, and in the level ground at their base. The landward wall started from a point near the present Stamboul custom-house, and reached the ridge of the 2nd hill, a little to the east of the point marked by Chemberli Tash (the column of Constantine). There the principal gate of the town opened upon the Egnatian road. From that gate the wall descended towards the Sea of Marmora, touching the water in the neighbourhood of the Seraglio lighthouse. The Acropolis, enclosing venerated temples, crowned the summit of the first hill, where the Seraglio stands. Immediately to the south of the fortress was the principal market-place of the town, surrounded by porticoes on its four sides, and hence named the Tetrastoon. On the southern side of the square stood the baths of Zeuxippus, and beyond them, still farther south, lay the Hippodrome, which Septimius Severus had undertaken to build but failed to complete. Two theatres, on the eastern slope of the Acropolis, faced the bright waters of the Marmora, and a stadium was found on the level tract on the other side of the hill, close to the Golden Horn. The Strategion, devoted to the military exercises of the brave little town, stood close to Sirkedji Iskelessi, and two artificial harbours, the Portus Prosforianus and the Neorion, indented the shore of the Golden Horn, respectively in front of the ground now occupied by the station of the Chemins de Fer Orientaux and the Stamboul custom-house. A graceful granite column, still erect on the slope above the head of the promontory, commemorated the victory of Claudius Gothicus over the Goths at Nissa, A.D. 269. All this furniture of Byzantium was appropriated for the use of the new capital.



According to Zosimus, the line of the landward walls erected by Constantine to defend New Rome was drawn at a distance of nearly 2 m. (15 stadia) to the west of the limits of the old town. It therefore ran across the promontory from the vicinity of Un Kapan Kapusi (Porta Platea), at the Stamboul head of the Inner Bridge, to the neighbourhood of Daud Pasha Kapusi (Porta S. Aemiliani), on the Marmora, and thus added the 3rd and 4th hills and portions of the 5th and 7th hills to the territory of Byzantium. We have two indications of the course of these walls on the 7th hill. One is found in the name Isa Kapusi (the Gate of Jesus) attached to a mosque, formerly a Christian church, situated above the quarter of Psamatia. It perpetuates the memory of the beautiful gateway which formed the triumphal entrance into the city of Constantine, and which survived the original bounds of the new capital as late as 1508, when it was overthrown by an earthquake. The other indication is the name Alti Mermer (the six columns) given to a quarter in the same neighbourhood. The name is an ignorant translation of Exakionion, the corrupt form of the designation Exokionion, which belonged in Byzantine days to that quarter because marked by a column outside the city limits. Hence the Arians, upon their expulsion from the city by Theodosius I., were allowed to hold their religious services in the Exokionion, seeing that it was an extra-mural district. This explains the fact that Arians are sometimes styled Exokionitae by ecclesiastical historians. The Constantinian line of fortifications, therefore, ran a little to the east of the quarter of Alti Mermer. In addition to the territory enclosed within the limits just described, the suburb of Sycae or Galata, on the opposite side of the Golden Horn, and the suburb of Blachernae, on the 6th hill, were regarded as parts of the city, but stood within their own fortifications. It was to the ramparts of Constantine that the city owed its deliverance when attacked by the Goths, after the terrible defeat of Valens at Adrianople, A.D. 378.

In the opinion of his courtiers, the bounds assigned to New Rome by Constantine seemed, it is said, too wide, but after some eighty years they proved too narrow for the population that had gathered within the city. The barbarians had meantime also grown more formidable, and this made it necessary to have stronger fortifications for the capital. Accordingly, in 413, in the reign of Theodosius II., Anthemius, then praetorian prefect of the East and regent, enlarged and refortified the city by the erection of the wall which forms the innermost line of defence in the bulwarks whose picturesque ruins now stretch from the Sea of Marmora, on the south of Yedi Kuléh (the seven towers), northwards to the old Byzantine palace of the Porphyrogenitus (Tekfour Serai), above the quarter of Egri Kapu. There the new works joined the walls of the suburb of Blachernae, and thus protected the city on the west down to the Golden Horn. Somewhat later, in 439, the walls along the Marmora and the Golden Horn were brought, by the prefect Cyrus, up to the extremities of the new landward walls, and thus invested the capital in complete armour. Then also Constantinople attained its final size. For any subsequent extension of the city limits was insignificant, and was due to strategic considerations. In 447 the wall of Anthemius was seriously injured by one of those earthquakes to which the city is liable. The disaster was all the more grave, as the Huns under Attila were carrying everything before them in the Balkan lands. The desperateness of the situation, however, roused the government of Theodosius II., who was still upon the throne, to put forth the most energetic efforts to meet the emergency. If we may trust two contemporary inscriptions, one Latin, the other Greek, still found on the gate Yeni Mevlevi Khanéh Kapusi (Porta Rhegium), the capital was again fully armed, and rendered more secure than ever, by the prefect Constantine, in less than two months. Not only was the wall of Anthemius restored, but, at the distance of 20 yds., another wall was built in front of it, and at the same distance from this second wall a broad moat was constructed with a breastwork along its inner edge. Each wall was flanked by ninety-six towers. According to some authorities, the moat was flooded during a siege by opening the aqueducts, which crossed the moat at intervals and conveyed water into the city in time of peace. This opinion is extremely doubtful. But in any case, here was a barricade 190-207 ft. thick, and 100 ft. high, with its several parts rising tier above tier to permit concerted action, and alive with large bodies of troops ready to pour, from every coign of vantage, missiles of death—arrows, stones, Greek fire—upon a foe. It is not strange that these fortifications defied the assaults of barbarism upon the civilized life of the world for more than a thousand years. As might be expected, the walls

demanded frequent restoration from time to time in the course of their long history. Inscriptions upon them record repairs, for example, under Justin II., Leo the Isaurian, Basil II., John Palaeologus, and others. Still, the ramparts extending now from the Marmora to Tekfour Serai are to all intents and purposes the ruins of the Theodosian walls of the 5th century.

This is not the case in regard to the other parts of the fortifications of the city. The walls along the Marmora and the Golden Horn represent the great restoration of the seaward defences of the capital carried out by the emperor Theophilus in the 9th century; while the walls between Tekfour Serai and the Golden Horn were built long after the reign of Theodosius II., superseding the defences of that quarter of the city in his day, and relegating them, as traces of their course to the rear of the later works indicate, to the secondary office of protecting the palace of Blachernae. In 627 Heraclius built the wall along the west of the quarter of Aivan Serai, in order to bring the level tract at the foot of the 6th hill within the city bounds, and shield the church of Blachernae, which had been exposed to great danger during the siege of the city by the Avars in that year. In 813 Leo V. the Armenian built the wall which stands in front of the wall of Heraclius to strengthen that point in view of an expected attack by the Bulgarians.

The splendid wall, flanked by nine towers, that descends from the court of Tekfour Serai to the level tract below Egri Kapu, was built by Manuel Comnenus (1143-1180) for the greater security of the part of the city in which stood the palace of Blachernae, then the favourite imperial residence. Lastly, the portion of the fortifications between the wall of Manuel and the wall of Heraclius presents too many problems to be discussed here. Enough to say, that in it we find work belonging to the times of the Comneni, Isaac Angelus and the Palaeologi.

If we leave out of account the attacks upon the city in the course of the civil wars between rival parties in the empire, the fortifications of Constantinople were assailed by the Avars in 627; by the Saracens in 673-677, and again in 718; by the Bulgarians in 813 and 913; by the forces of the Fourth Crusade in 1203-1204; by the Turks in 1422 and 1453. The city was taken in 1204, and became the seat of a Latin empire until 1261, when it was recovered by the Greeks. On the 29th of May 1453 Constantinople ceased to be the capital of the Roman empire in the East, and became the capital of the Ottoman dominion.

The most noteworthy points in the circuit of the walls of the city are the following. (1) The Golden gate, now included in the Turkish fortress of Yedi Kuléh. It is a triumphal archway, consisting of three arches, erected in honour of the victory of Theodosius I. over Maximus in 388, and subsequently incorporated in the walls of Theodosius II., as the state entrance of the capital. (2) The gate of Selivria, or of the Pegé, through which Alexius Strategopoulos made his way into the city in 1261, and brought the Latin empire of Constantinople to an end. (3) The gate of St Romanus (Top Kapusi), by which, in 1453, Sultan Mahommed entered Constantinople after the fall of the city into Turkish hands. (4) The great breach made in the ramparts crossing the valley of the Lycus, the scene of the severest fighting in the siege of 1453, where the Turks stormed the city, and the last Byzantine emperor met his heroic death. (5) The palace of the Porphyrogenitus, long erroneously identified with the palace of the Hebdomon, which really stood at Makrikeui. It is the finest specimen of Byzantine civil architecture left in the city. (6) The tower of Isaac Angelus and the tower of Anemas, with the chambers in the body of the wall to the north of them. (7) The wall of Leo, against which the troops of the Fourth Crusade came, in 1203, from their camp on the hill opposite the wall, and delivered their chief attack. (8) The walls protecting the quarter of Phanar, which the army and fleet of the Fourth Crusade under the Venetian doge Henrico Dandolo carried in 1204. (9) Yali Kiosk Kapusi, beside which the southern end of the chain drawn across the mouth of the harbour during a siege was attached. (10) The ruins of the palace of Hormisdas, near Chatladi Kapu, once the residence of Justinian the Great and Theodora. It was known in later times as the palace of the Bucoleon, and was the scene of the assassination of Nicephorus Phocas. (11) The sites of the old harbours between Chatladi Kapu and Daud Pasha Kapusi. (12) The fine marble tower near the junction of the walls along the Marmora with the landward walls.

The interior arrangements of the city were largely determined by the configuration of its site, which falls into three great divisions,—the level ground and slopes looking towards the Sea of Marmora, the range of hills forming the midland portion of the promontory, and the slopes and level ground facing the Golden Horn. In each division a great street ran through the city from east to west, generally lined with arcades on one side, but with arcades on both sides when traversing the finer and busier quarters. The street along the ridge formed the principal thoroughfare, and was named the Mesé (Μέση), because it ran through the middle of the city. On reaching the west of the 3rd hill, it divided into two branches, one leading across the 7th hill to the Golden gate, the other conducting to the church of the Holy Apostles, and the gate of Charisius (Edirnéh Kapusi). The Mesé linked together the great fora of the city,—the Augustaion on the south of St Sophia, the forum of Constantine on the summit of the 2nd hill, the forum of Theodosius I. or of Taurus on the summit of the 3rd hill, the forum of Amastrianon where the mosque of Shah Zadéh is situated, the forum of the Bous at Ak Serai, and the forum of Arcadius or Theodosius II. on the summit of the 7th hill. This was the route followed on the occasion of triumphal processions.

Of the edifices and monuments which adorned the fora, only a slight sketch can be given here. On the north side of the Augustaion rose the church of St Sophia, the most glorious cathedral of Eastern Christendom; opposite, on the southern side of the square, was the Chalcé, the great gate of the imperial palace; on the east was the senate house, with a porch of six noble columns; to the west, across the Mesé, were the law courts. In the area of the square stood the Milion, whence distances from Constantinople were measured, and a lofty column which bore the equestrian statue of Justinian the Great. There also was the statue of the empress Eudoxia, famous in the history of Chrysostom, the pedestal of which is preserved near the church of St Irené. The Augustaion was the heart of the city's ecclesiastical and political life. The forum of Constantine was a great business centre. Its most remarkable monument was the column of Constantine, built of twelve drums of porphyry and bearing aloft his statue. Shorn of much of its beauty, the column still stands to proclaim the enduring influence of the foundation of the city.

In the forum of Theodosius I. rose a column in his honour, constructed on the model of the hollow columns of Trajan and Marcus Aurelius at Rome. There also was the Anemodoulion, a beautiful pyramidal structure, surmounted by a vane to indicate the direction of the wind. Close to the forum, if not in it, was the capitol, in which the university of Constantinople was established. The most conspicuous object in the forum of the Bous was the figure of an ox, in bronze, beside which the bodies of criminals were sometimes burnt. Another hollow column, the pedestal of which is now known as Avret Tash, adorned the forum of Arcadius. A column in honour of the emperor Marcian still stands in the valley of the Lycus, below the mosque of Sultan Mahommed the Conqueror. Many beautiful statues, belonging to good periods of Greek and Roman art, decorated the fora, streets and public buildings of the city, but conflagrations and the vandalism of the Latin and Ottoman conquerors of Constantinople have robbed the world of those treasures.

The imperial palace, founded by Constantine and extended by his successors, occupied the territory which lies to the east of St Sophia and the Hippodrome down to the water's edge. It consisted of a large number of detached buildings, in grounds made beautiful with gardens and trees, and commanding magnificent views over the Sea of Marmora, across to the hills and mountains of the Asiatic coast. The buildings were mainly grouped in three divisions—the Chalcé, the Daphné and the "sacred palace." Labarte and Paspates have attempted to reconstruct the palace, taking as their guide the descriptions given of it by Byzantine writers. The work of Labarte is specially valuable, but without proper excavations of the site all attempts to restore the plan of the palace with much accuracy lack a solid foundation. With the accession of Alexius Comnenus, the palace of Blachernae, at the north-western corner of the city, became the principal residence of the Byzantine court, and was in consequence extended and embellished. It stood in a more retired position, and was conveniently situated for excursions into the country and hunting expeditions. Of the palaces outside the walls, the most frequented were the palace at the

Hebdomon, now Makrikeui, in the early days of the Empire, and the palace of the Pegé, now Balukli, a short distance beyond the gate of Selivria, in later times. For municipal purposes, the city was divided, like Rome, into fourteen Regions.

As the seat of the chief prelate of Eastern Christendom, Constantinople was characterized by a strong theological and ecclesiastical temperament. It was full of churches and monasteries, enriched with the reputed relics of saints, prophets and martyrs, which consecrated it a holy city and attracted pilgrims from every quarter to its shrines. It was the meeting-place of numerous ecclesiastical councils, some of them ecumenical (see below, Constantinople, Councils of). It was likewise distinguished for its numerous charitable institutions. Only some twenty of the old churches of the city are left. Most of them have been converted into mosques, but they are valuable monuments of the art which flourished in New Rome. Among the most interesting are the following. St John of the Studium (Emir-Achor Jamissi) is a basilica of the middle of the 5th century, and the oldest ecclesiastical fabric in the city; it is now, unfortunately, almost a complete ruin. SS. Sergius and Bacchus (Kutchuk Aya Sofia) and St Sophia are erections of Justinian the Great. The former is an example of a dome placed on an octagonal structure, and in its general plan is similar to the contemporary church of S. Vitale at Ravenna. St Sophia (i.e. Ἁγία Σοφία, Holy Wisdom) is the glory of Byzantine art, and one of the most beautiful buildings in the world. St Mary Diaconissa (Kalender Jamissi) is a fine specimen of the work of the closing years of the 6th century. St Irené, founded by Constantine, and repaired by Justinian, is in its present form mainly a restoration by Leo the Isaurian, in the middle of the 8th century. St Mary Panachrantos (Fenari Isa Mesjidi) belongs to the reign of Leo the Wise (886-912). The Myrelaion (Bodrum Jami) dates from the 10th century. The Pantepoptes (Eski Imaret Jamissi), the Pantocrator (Zeirek Kilissè Jamissi), and the body of the church of the Chora (Kahriyeh Jamissi) represent the age of the Comneni. The Pammacaristos (Fetiyeh Jamissi), St Andrew in Krisei (Khoja Mustapha Jamissi), the narthexes and side chapel of the Chora were, at least in their present form, erected in the times of the Palaeologi. It is difficult to assign precise dates to SS. Peter and Mark (Khoda Mustapha Jamissi at Aivan Scrai), St Theodosia (Gul Jamissi), St Theodore Tyrone (Kilissé Jamissi). The beautiful façade of the last is later than the other portions of the church, which have been assigned to the 9th or 10th century.

For the thorough study of the church of St Sophia, the reader must consult the works of Fossati, Salzenburg, Lethaby and Swainson, and Antoniadi. The present edifice was built by Justinian the Great, under the direction of Anthemius of Tralles and his nephew Isidorus of Miletus. It was founded in 532 and dedicated on Christmas Day 538. It replaced two earlier churches of that name, the first of which was built by Constantius and burnt down in 404, on the occasion of the exile of Chrysostom, while the second was erected by Theodosius II. in 415, and destroyed by fire in the Nika riot of 532. Naturally the church has undergone repair from time to time. The original dome fell in 558, as the result of an earthquake, and among the improvements introduced in the course of restoration, the dome was raised 25 ft. higher than before. Repairs are recorded under Basil I., Basil II., Andronicus III. and Cantacuzene. Since the Turkish conquest a minaret has been erected at each of the four exterior angles of the building, and the interior has been adapted to the requirements of Moslem worship, mainly by the destruction or concealment of most of the mosaics which adorned the walls. In 1847-1848, during the reign of Abd-ul-Mejid, the building was put into a state of thorough repair by the Italian architect Fossati. Happily the sultan allowed the mosaic figures, then exposed to view, to be covered with matting before being plastered over. They may reappear in the changes which the future will bring.

The exterior appearance of the church is certainly disappointing, but within it is, beyond all question, one of the most beautiful creations of human art. On a large scale, and in magnificent style, it combines the attractive features of a basilica, with all the glory of an edifice crowned by a dome. We have here a stately hall, 235 ft. N. and S., by 250 ft. E. and W., divided by two piers and eight columns on either hand into nave and aisles, with an apse at the eastern end and galleries on the three other sides. Over the central portion of the nave, a square area at the angles

of which stand the four piers, and at a height of 179 ft. above the floor, spreads a dome, 107 ft. in diameter, and 46 ft. deep, its base pierced by forty arched windows. From the cornice of the dome stretches eastwards and westwards a semi-dome, which in its turn rests upon three small semi-domes. The nave is thus covered completely by a domical canopy, which, in its ascent, swells larger and larger, mounts higher and higher, as though a miniature heaven rose overhead. For lightness, for grace, for proportion, the effect is unrivalled. The walls of the building are reveted with marbles of various hues and patterns, arranged to form beautiful designs, and traces of the mosaics which joined the marbles in the rich and soft coloration of the whole interior surface of the building appear at many points. There are forty columns on the ground floor and sixty in the galleries, often crowned with beautiful capitals, in which the monograms of the emperor Justinian and the empress Theodora are inscribed. The eight porphyry columns, placed in pairs in the four bays at the corners of the nave, belonged originally to the temple of the sun at Baalbek. They were subsequently carried to Rome by Aurelian, and at length presented to Justinian by a lady named Marcia, to be erected in this church “for the salvation of her soul.” The columns of verde antique on either side of the nave are commonly said to have come from the temple of Diana at Ephesus, but recent authorities regard them as specially cut for use in the church. The inner narthex of the church formed a magnificent vestibule 205 ft. long by 26 ft. wide, reveted with marble slabs and glowing with mosaics.

The citizens of Constantinople found their principal recreation in the chariot-races held in the Hippodrome, now the At Meidan, to the west of the mosque of Sultan Ahmed. So much did the race-course (begun by Severus but completed by Constantine) enter into the life of the people that it has been styled “the axis of the Byzantine world.” It was not only the scene of amusement, but on account of its ample accommodation it was also the arena of much of the political life of the city. The factions, which usually contended there in sport, often gathered there in party strife. There emperors were acclaimed or insulted; there military triumphs were celebrated; there criminals were executed, and there martyrs were burned at the stake. Three monuments remain to mark the line of the Spina, around which the chariots whirled; an Egyptian obelisk of Thothmes III., on a pedestal covered with bas-reliefs representing Theodosius I., the empress Galla, and his sons Arcadius and Honorius, presiding at scenes in the Hippodrome; the triple serpent column, which stood originally at Delphi, to commemorate the victory of Plataea 479 B.C.; a lofty pile of masonry, built in the form of an obelisk, and once covered with plates of gilded bronze. Under the Turkish buildings along the western side of the arena, some arches against which seats for the spectators were built are still visible.

The city was supplied with water mainly from two sources; from the streams immediately to the west, and from the springs and rain impounded in reservoirs in the forest of Belgrade, to the north-west, very much on the system followed by the Turks. The water was conveyed by aqueducts, concealed below the surface, except when crossing a valley. Within the city the water was stored in covered cisterns, or in large open reservoirs. The aqueduct of Justinian, the Crooked aqueduct, in the open country, and the aqueduct of Valens that spans the valley between the 4th and 3rd hills of the city, still carry on their beneficent work, and afford evidence of the attention given to the water-supply of the capital during the Byzantine period. The cistern of Arcadius, to the rear of the mosque of Sultan Selim (having, it has been estimated, a capacity of 6,571,720 cubic ft. of water), the cistern of Aspar, a short distance to the east of the Gate of Adrianople, and the cistern of Mokius, on the 7th hill, are specimens of the open reservoirs within the city walls. The cistern of Bin Bir Derek (cistern of Illus) with its 224 columns, each built up with three shafts, and the cistern Yen Batan Serai (Cisterna Basilica) with its 420 columns show what covered cisterns were, on a grand scale. The latter is still in use.[1]

Byzantine Constantinople was a great commercial centre. To equip it more fully for that purpose, several artificial harbours were constructed along the southern shore of the city, where no natural haven existed to accommodate ships coming up the Sea of Marmora. For the convenience of the imperial court, there was a small harbour in the bend of the shore to the east of Chatladi Kapu, known as the harbour of the Bucoleon. To the west

of that gate, on the site of Kadriga Limani (the Port of the Galley), was the harbour of Julian, or, as it was named later, the harbour of Sophia (the empress of Justin II.). Traces of the harbour styled the Kontoscalion are found at Kum Kapu. To the east of Yeni Kapu stood the harbour of Kaisarius or the Heptascalon, while to the west of that gate was the harbour which bore the names of Eleutherius and of Theodosiur I. A harbour named after the Golden Gate stood on the shore to the south-west of the triumphal gate of the city.

The Modern City.—As the capital of the Ottoman empire, the aspect of the city changed in many ways. The works of art which adorned New Rome gradually disappeared. The streets, never very wide, became narrower, and the porticoes along their sides were almost everywhere removed. A multitude of churches were destroyed, and most of those which survived were converted into mosques. In race and garb and speech the population grew largely oriental. One striking alteration in the appearance of the city was the conversion of the territory extending from the head of the promontory to within a short distance of St Sophia into a great park, within which the buildings constituting the seraglio of the sultans, like those forming the palace of the Byzantine emperors, were ranged around three courts, distinguished by their respective gates—Bab-i-Humayum, leading into the court of the Janissaries; Orta Kapu, the middle gate, giving access to the court in which the sultan held state receptions; and Bah-i-Saadet, the Gate of Felicity, leading to the more private apartments of the palace. From the reign of Abd-ul-Mejid, the seraglio has been practically abandoned, first for the palace of Dolmabagché on the shore near Beshiktash, and now for Yildiz Kiosk, on the heights above that suburb. It is, however, visited annually by the sultan, to do homage to the relics of the prophet which are kept there. The older apartments of the palace, such as the throne-room, the Bagdad Kiosk, and many of the objects in the imperial treasury are of extreme interest to all lovers of oriental art. To visit the seraglio, an imperial iradé is necessary. Another great change in the general aspect of the city has been produced by the erection of stately mosques in the most commanding situations, where dome and minarets and huge rectangular buildings present a combination of mass and slenderness, of rounded lines and soaring pinnacles, which gives to Constantinople an air of unique dignity and grace, and at the same time invests it with the glamour of the oriental world. The most remarkable mosques are the following:—The mosque of Sultan Mahommed the Conqueror, built on the site of the church of the Holy Apostles, in 1459, but rebuilt in 1768 owing to injuries due to an earthquake; the mosques of Sultan Selim, of the Shah Zadeh, of Sultan Suleiman and of Rustem Pasha—all works of the 16th century, the best period of Turkish architecture; the mosque of Sultan Bayezid II. (1497-1505); the mosque of Sultan Ahmed I. (1610); Yeni-Validé-Jamissi (1615-1665); Nuri-Osmanieh (1748-1755); Laleli-Jamissi (1765). The Turbehs containing the tombs of the sultans and members of their families are often beautiful specimens of Turkish art.

In their architecture, the mosques present a striking instance of the influence of the Byzantine style, especially as it appears in St Sophia. The architects of the mosques have made a skilful use of the semi-dome in the support of the main dome of the building, and in the consequent extension of the arched canopy that spreads over the worshipper. In some cases the main dome rests upon four semi-domes. At the same time, when viewed from the exterior, the main dome rises large, bold and commanding, with nothing of the squat appearance that mars the dome of St Sophia, with nothing of the petty prettiness of the little domes perched on the drums of the later Byzantine churches. The great mosques express the spirit of the days when the Ottoman empire was still mighty and ambitious. Occasionally, as in the case of Laleli Jamissi, where the dome rests upon an octagon inscribed in a square, the influence of SS. Sergius and Bacchus is perceptible.

For all intents and purposes, Constantinople is now the collection of towns and villages situated on both sides of the Golden Horn and along the shores of the Bosporus, including Scutari and Kadikeui. But the principal parts of this great agglomeration are Stamboul (from Gr. εἰς τὴν πόλιν, "into the city"), the name specially applied to the portion of the city upon the promontory, Galata and Pera. Galata has a long history, which becomes of general interest after 1265, when it was assigned to the Genoese merchants in the city by Michael Palaeologus, in return

for the friendly services of Genoa in the overthrow of the Latin empire of Constantinople. In the course of time, notwithstanding stipulations to the contrary, the town was strongly fortified and proved a troublesome neighbour During the siege of 1453 the inhabitants maintained on the whole a neutral attitude, but on the fall of the capital they surrendered to the Turkish conqueror, who granted them liberal terms. The walls have for the most part been removed. The noble tower, however, which formed the citadel of the colony, still remains, and is a striking feature in the scenery of Constantinople. There are also churches and houses dating from Genoese days. Galata is the chief business centre of the city, the seat of banks, post-offices, steamship offices, &c. Pera is the principal residential quarter of the European communities settled in Constantinople, where the foreign embassies congregate, and the fashionable shops and hotels are found.

Since the middle of the 19th century the city has yielded more and more to western influences, and is fast losing its oriental character. The sultan's palaces, and the residences of all classes of the community, adopt with more or less success a European style of building. The streets have been widened and named. They are in many instances better paved, and are lighted at night. The houses are numbered. Cabs and tramways have been introduced. Public gardens have been opened. For some distance outside the Galata bridge, both shores of the Golden Horn have been provided with a quay at which large steamers can moor to discharge or embark their passengers and cargo. The Galata quay, completed in 1889, is 756 metres long and 20 metres wide; the Stamboul quay, completed in 1900, is 378 metres in length. The harbour, quays and facilities for handling merchandise, which have been established at the head of the Anatolian railway, at Haidar Pasha, under German auspices, would be a credit to any city. It is true that most of these improvements are due to foreign enterprise and serve largely foreign interests; still they have also benefited the city, and added much to the convenience and comfort of local life. There has been likewise progress in other than material respects. The growth of the imperial museum of antiquities, under the direction of Hamdy Bey, within the grounds of the Seraglio, has been remarkable; and while the collection of the sarcophagi discovered at Sidon constitutes the chief treasure of the museum, the institution has become a rich storehouse of many other valuable relics of the past. The existence of a school of art, where painting and architecture are taught, is also a sign of new times. A school of handicrafts flourishes on the Sphendoné of the Hippodrome. The fine medical school between Scutari and Haidar Pasha, the Hamidieh hospital for children, and the asylum for the poor, tell of the advance of science and humanity in the place.

Considerable attention is now given to the subject of education throughout the empire, a result due in great measure to the influence of the American and French schools and colleges established in the provinces and at the capital. More than thirty foreign educational institutions flourish in Constantinople itself, and they are largely attended by the youth belonging to the native communities of the country. The Greek population is provided with excellent schools and gymnasia, and the Armenians also maintain schools of a high grade. The Turkish government itself became, moreover, impressed with the importance of education, and as a consequence the whole system of public instruction for the Moslem portion of the population was, during the reign of Sultan Abd-ul-Hamid II., more widely extended and improved. Beside the schools of the old type attached to the mosques, schools of a better class were established under the direct control of the minister of education, which, although open to improvement, certainly aimed at a higher standard than that reached in former days. The progress of education became noticeable even among Moslem girls. The social and political influence of this intellectual improvement among the various communities of the empire soon made itself felt, and had much to do with the startling success of the constitutional revolution carried out, under the direction of the Committee of Union and Progress, in the autumn of 1908.

Climate.—The climate of the city is healthy, but relaxing. It is damp and liable to sudden and great changes of temperature. The winds from the north and those from the south are at constant feud, and blow cold or hot in the most capricious manner, often in the course of the same day. "There are two climates at Constantinople, that of the

north and that of the south wind." The winters may be severe, but when mild they are wet and not invigorating. In summer the heat is tempered by the prevalence of a north-east wind that blows down the channel of the Bosporus. Observations at Constantinople and at Scutari give the following results, for a period of twenty years.

	Constantinople.	Scutari.
Mean temperature	57° 7′	58° 1′
Maximum	99° 1′	103° 6′
Minimum	17° 2′	13° 0′
Rain	28.3 in.	29.29 in.
Number of rainy days	112	128.6

The sanitation of the city has been improved, although much remains to be done in that respect. No great epidemic has visited the city since the outbreak of cholera in 1866. Typhoid and pulmonary diseases are common.

Population.—The number of the population of the city is an uncertain figure, as no accurate statistics can be obtained. It is generally estimated between 800,000 and 1,000,000. The inhabitants present a remarkable conglomeration of different races, various nationalities, divers languages, distinctive costumes and conflicting faiths, giving, it is true, a singular interest to what may be termed the human scenery of the city, but rendering impossible any close social cohesion, or the development of a common civic life. Constantinople has well been described as "a city not of one nation but of many, and hardly more of one than of another." The following figures are given as an approximate estimate of the size of the communities which compose the population.

Moslems	384,910
Greeks	152,741
Greek Latins	1,082
Armenians	149,590
Roman Catholics (native)	6,442
Protestants (native)	819
Bulgarians	4,377
Jews	44,361
Foreigners	129,243
	873,565

Water-Supply.—Under the rule of the sultans, the water-supply of the city has been greatly extended. The reservoirs in the forest of Belgrade have been enlarged and increased in number, and new aqueducts have been added to those erected by the Byzantine emperors. The use of the old cisterns within the walls has been almost entirely abandoned, and the water is led to basins in vaulted chambers (*Taxim*), from which it is distributed by underground conduits to the fountains situated in the different quarters of the city. From these fountains the water is taken to a house by water-carriers, or, in the case of the humbler classes, by members of the household itself.

For the supply of Pera, Galata and Beshiktash, Sultan Mahmud I. constructed, in 1732, four bends in the forest of Belgrade, N.N.W. and N.E. of the village of Bagchekeui, and the fine aqueduct which spans the head of the valley of Buyukderé. Since 1885, a French company, La Compagnie des Eaux, has rendered a great service by bringing water to Stamboul, Pera, and the villages on the European side of the Bosporus, from Lake Dercos, which lies close to the shore of the Black Sea some 29 m. distant from the city. The Dercos water is laid on in many houses. Since 1893 a German company has supplied Scutari and Kadikeui with water from the valley of the Sweet Waters of Asia.

Trade.—The trade of the city has been unfavourably affected by the political events which have converted former provinces of the Turkish empire into autonomous states, by the development of business at other ports of the empire, owing to the opening up of the interior country through the construction of railroads, and by the difficulties which the government, with the view of preventing political agitation, has put in the way of easy intercourse by natives between the capital and the provinces. Most of the commerce of the city is in hands of foreigners and of Armenian and Greek merchants. Turks have little if anything to do with trade on a large scale. "The capital," says a writer in the *Konstantinopler Handelsblatt* of November 1904, "produces very little for export, and its hinterland is small, extending on the European side only a few kilometres—the outlet for the fertile Eastern Rumelia is Dedeagach—and on the Asiatic side embracing the Sea of Marmora and the Anatolian railway district. Even part of this will be lost to Constantinople when the Anatolian railway is connected with the port of Mersina and with the Kassaba-Smyrna railway. Some 750 tons of the sweetmeat known as 'Turkish delight' are annually exported to the United Kingdom, America and Rumelia; embroideries, &c., are sold in fair quantities to tourists. Otherwise the chief articles of Constantinople's export trade consist of refuse and waste materials, sheep's wool (called *Kassab bashi*) and skins from the slaughter-houses (in 1903 about 3,000,000 skins were exported, mostly to America), horns, hoofs, goat and horse hair, guts, bones, rags, bran, old iron, &c., and finally dogs' excrements, called in trade 'pure,' a Constantinople speciality, which is used in preparing leather for ladies' gloves. From the hinterland comes mostly raw produce such as grain, drugs, wool, silk, ores and also carpets. The chief article is grain."

The average value of the goods passing through the port of Constantinople at the opening of the 20th century was estimated at about £T 11,000,000. From the imperfect statistics available, the following tables of the class of goods imported and exported, and their respective values, were drawn up in 1901 by the late Mr Whittaker, *The Times* correspondent.

Imports.	
Manufactured goods (cotton, woollen, silk, &c.)	£T2 3,500,000
Haberdashery, ironmongery	90,000
Sugar	500,000
Petroleum	400,000
Flour	400,000
Coffee	300,000
Rice	250,000
Cattle	100,000
Various	850,000
Total	£T 7,000,000
Exports.	
Cereals	£T 1,000,000
Mohair	800,000
Carpets	700,000
Silk and cocoons	500,000
Opium	400,000
Gum tragacanth	150,000
Wool	100,000
Hides	100,000
Various	250,000
Total	£T 4,100,000

About 40% of the import trade of Constantinople is British. According to the trade report of the British consulate, the share of the United Kingdom in the value of £7,142,000 on the total imports to Constantinople during the year 1900-1901 was £1,811,000; while the share of the United Kingdom in the value of £2,669,000 on the total exports during the same year was £998,000. But it is worthy of note that while British commerce still led

the way in Turkey, the trade of some other countries with Turkey, especially that of Germany, was increasing more rapidly. Comparing the average of the period 1896-1900 with the total for 1904, British trade showed an increase of 33%, Austro-Hungarian of nearly 60%, Germany of 130%, Italian of 98%, French of 8%, and Belgian of nearly 33%. The shipping visiting the port of Constantinople during the year 1905, excluding sailing and small coasting vessels, was 9796, representing a total of 14,785,080 tons. The percentage of steamers under the British flag was 37.1; of tonnage, 45.9.

Administration.—For the preservation of order and security, the city is divided into four divisions (Belad-i-Selassi), viz. Stamboul, Pera-Galata, Beshiktash and Scutari. The minister of police is at the head of the administration of the affairs of these divisions, and is *ex-officio* governor of Stamboul. The governors of the other divisions are subordinate to him, but are appointed by the sultan. Each governor has a special staff of police and gendarmery and his own police-court. In each division is a military commander, having a part of the garrison of the city under his orders, but subordinate to the commander-in-chief of the troops guarding the capital.

The municipal government of the four divisions of the city is in the hands of a prefect, appointed by the sultan, and subordinate to the minister of the interior. He is officially styled the prefect of Stamboul, and is assisted by a council of twenty-four members, appointed by the sultan or the minister of the interior. All matters concerning the streets, the markets, the bazaars, the street-porters (*hamals*), public weighers, baths and hospitals come under his jurisdiction. He is charged also with the collection of the city dues, and the taxes on property. The city is furthermore divided into ten municipal circles as follows. In Stamboul: (1) Sultan Bayezid, (2) Sultan Mehemet, (3) Djerah Pasha (Psamatia); on the European side of the Bosporus and the northern side of the Golden Horn: (4) Beshiktash, (5) Yenikeui, (6) Pera, (7) Buyukderé; on the Asiatic side of the Bosporus: (8) Anadol Hissar, (9) Scutari, (10) Kadikeui. Each circle is subdivided into several wards (*mahalleh*). "The outlying parts of the city are divided into six districts (*Cazas*), namely, Princes' Islands, Guebzeh, Beicos, Kartal, Kuchuk-Chekmedjé and Shilé, each having its governor (*kaimakam*), who is usually chosen by the palace. These districts are dependencies of the ministry of the interior, and their municipal affairs are directed by agents of the prefecture."

In virtue of old treaties, known as the Capitulations (q.v.), foreigners enjoy to a large extent the rights of exterritoriality. In disputes with one another, they are judged before their own courts of justice. In litigation between a foreigner and a native, the case is taken to a native court, but a representative of the foreigner's consulate attends the proceedings. Foreigners have a right to establish their own schools and hospitals, to hold their special religious services, and even to maintain their respective national post-offices. No Turkish policeman may enter the premises of a foreigner without the sanction of the consular authorities to whose jurisdiction the latter belongs. A certain measure of self-government is likewise granted to the native Christian communities under their ecclesiastical chiefs.

Bibliography.—On Constantinople generally, besides the regular guide-books and works already mentioned, see P. Gyllius, *De topographia Constantinopoleos, De Bosporo Thracio* (1632); Du Cange, *Constantinopolis Christiana* (1680); J. von Hammer, *Constantinopolis und der Bosporos* (1822); Mordtmann, *Esquisse topographique de Constantinople* (1892); E. A. Grosvenor, *Constantinople* (1895); van Millingen, *Byzantine Constantinople* (1899); Paspates, Βυζαντιναί Μελέται (1877); Scarlatos Byzantios, Ἡ Κωνσταντίνου πόλις (1851); E. Pears, *Fall of Constantinople* (1885), *The Destruction of the Greek Empire* (1903); Gibbon, *The Decline and Fall of the Roman Empire*; Salzenberg, *Altchristliche Baudenkmale von Konstantinopel*; Lethaby and Swainson, *The Church of Sancta Sophia*; Pulgher, *Les Anciennes Églises byzantines de Constantinople*; Labarte, *Le Palais impérial de Constantinople et ses abords*.

(A. van M.)

1 For full information on the subject of the ancient water-supply see Count A. F. Andréossy, *Constantinople et le Bosphore*; Tchikatchev, *Le Bosphore et Constantinople* (2nd ed., Paris, 1865); Forchheimer and Strzygowski, *Die byzantinischen Wasserbehälter*; also article AQUEDUCT.

2 A Turkish lira = 18 shillings (English).

CONSTANTINOPLE, COUNCILS OF. Of the numerous ecclesiastical councils held at Constantinople the most important are the following:

1. The second ecumenical council, 381, which was in reality only a synod of bishops from Thrace, Asia and Syria, convened by Theodosius with a view to uniting the church upon the basis of the Orthodox faith. No Western bishop was present, nor any Roman legate; from Egypt came only a few bishops, and these tardily. The first president was Meletius of Antioch, whom Rome regarded as schismatic. Yet, despite its sectional character, the council came in time to be regarded as ecumenical alike in the West and in the East.

The council reaffirmed the Nicene faith and denounced all opposing doctrines. The so-called "Niceno-Constantinopolitan Creed," which has almost universally been ascribed to this council, is certainly not the Nicene creed nor even a recension of it, but most likely a Jerusalem baptismal formula revised by the interpolation of a few Nicene test-words. More recently its claim to be called "Constantinopolitan" has been challenged. It is not found in the earliest records of the acts of the council, nor was it referred to by the council of Ephesus (431), nor by the "Robber Synod" (449), although these both confirmed the Nicene faith. It also lacks the definiteness one would expect in a creed composed by an anti-Arian, anti-Pneumatomachian council. Harnack (Herzog-Hauck, *Realencyklopädie*, 3rd ed., s.v. "Konstantinopolit. Symbol.") conjectures that it was ascribed to the council of Constantinople just before the council of Chalcedon in order to prove the orthodoxy of the Fathers of the second ecumenical council. At all events, it became the creed of the universal church, and has been retained without change. Save for the addition of *filioque*.

Of the seven reputed canons of the council only the first four are unquestionably genuine. The fifth and the sixth probably belong to a synod of 382, and the seventh is properly not a canon. The most important enactments of the council were the granting of metropolitan rights to the bishops of Alexandria, Antioch, Thrace, Pontus and Ephesus; and according to Constantinople the place of honour after Rome, against which Rome protested. Not until 150 years later, and then only under compulsion of the emperor Justinian, did Rome acknowledge the ecumenicity of the council, and that merely as regarded its doctrinal decrees.

See Mansi iii. pp. 521-599; Hardouin i. pp. 807-826; Hefele, 2nd ed., ii. pp. 1 sqq. (English translation, ii. pp. 340 sqq.); Hort, *Two Dissertations* (Cambridge, 1876); and the article Creeds.

2. The council of 553, the fifth ecumenical, grew out of the controversy of the "Three Chapters," an adequate account of which, up to the time of the council, may be found in the articles JUSTINIAN and VIGILIUS. The council convened, in response to the imperial summons, on the 4th of May 553. Of the 165 bishops who subscribed the acts all but the five or six from Egypt were Oriental; the pope, Vigilius, refused to attend (he had made his escape from Constantinople, and from his retreat in Chalcedon sent forth a vain protest against the council). The synod was utterly subservient to the emperor. The "Three Chapters" were condemned, and their authors, long dead, anathematized, without, however, derogating from the authority of the council of Chalcedon, which had given them a clean bill of orthodoxy. Vigilius was excommunicated, and his name erased from the diptychs. The Orthodox faith was set forth in fourteen anathemas. Opinion is divided as to whether Origen was condemned. His

name occurs in the eleventh anathema, but some consider it an interpolation; Hefele defends the genuineness of the text, but finds no evidence for a special session against Origen, as some have conjectured.

The council was confirmed by the emperor, and was generally received in the East. Vigilius was soon coerced into submission, but the West repudiated his pusillanimous surrender, and rejected the council. A schism ensued which lasted half a century and was not fully healed until the synod of Aquileia, about 700. But the ecumenicity of the council was generally acknowledged by 680.

See Mansi ix. pp. 24-106, 149-658, 712-730; Hardouin iii. pp. 1-328, 331, 414, 524; Hefele, 2nd ed., ii. pp. 798-924 (English translation, iv. pp. 229-365).

3. The sixth ecumenical council, 680-681, which was convened by the emperor Constantine Pogonatus to terminate the Monothelitic controversy (see MONOTHELITES). All the patriarchates were represented, Constantinople and Antioch by their bishops in person, the others by legates. The number of bishops present varied from 150 to 300. The council approved the first five ecumenical councils and reaffirmed the Nicene and "Niceno-Constantinopolitan" creeds. Monothelitism was unequivocally condemned; Christ was declared to have had "two natural wills and two natural operations, without division, conversion, separation or confusion." Prominent Monothelites, living or dead, were anathematized, in particular Sergius and his successors in the see of Constantinople, the former pope, Honorius, and Macarius, the patriarch of Antioch. An imperial decree confirmed the council, and commanded the acceptance of its doctrines under pain of severe punishment. The Monothelites took fright and fled to Syria, where they gradually formed the sect of the Maronites (q.v.).

The anathematizing of Honorius as heterodox has occasioned no slight embarrassment to the supporters of the doctrine of papal infallibility. It is not within the scope of this article to pass judgment upon the various proposed solutions of the difficulty, e.g. that Honorius was not really a Monothelite; that in acknowledging one will he was not speaking *ex cathedra*; that, at the time of condemning him, the council was no longer ecumenical; &c. One thing is certain, however, he was anathematized; and the notion of interpolation in the acts of the council (Baronius) may be dismissed as groundless.

See Mansi xi. pp. 190-922; Hardouin iii. pp. 1043-1644; Hefele, 2nd ed. iii. pp. 121-313.

4. The "Quinisext Synod" (692), so-called because it was regarded by the Greeks as supplementing the fifth and sixth ecumenical councils, was held in the dome of the Imperial Palace ("In Trullo," whence the synod is called also "Trullan"). Its work was purely legislative and its decisions were set forth in 102 canons. The sole authoritative standards of discipline were declared to be the "eighty-five apostolic canons," the canons of the first four ecumenical councils and of the synods of Ancyra, Neo-Caesarea, Antioch, Changra, Laodicea, Sardica and Carthage, and the canonical writings of some twelve Fathers,—all canons, synods and Fathers, Eastern with one exception, viz. Cyprian and the synod of Carthage; the bishops of Rome and the occidental synods were utterly ignored.

The canons of the second and fourth ecumenical councils respecting the rank of Constantinople were confirmed; the rank of a see was declared to follow the civil rank of its city; unenthroned bishops were guaranteed against diminution of their rights; metropolitans were forbidden to alienate the property of vacant suffragan sees.

The provisions respecting clerical marriage were avowedly more lenient than the Roman practice. Ordination was denied to any one who after baptism had contracted a second marriage, kept a concubine, or married a widow or a woman of ill-repute. Lectors and cantors might marry after ordination; presbyters, deacons and sub-deacons, if already married, should retain their wives; a bishop, however, while not dissolving his marriage, should keep his wife at a distance, making suitable provision for her. An illegally married cleric could not perform sacerdotal functions. Monks and nuns were to be carefully separated, and were not to leave their houses without permission.

It was forbidden to celebrate baptism or the eucharist in private oratories; neither might laymen give the elements to themselves, nor approach the altar, nor teach. Offerings for the dead were authorized, and the mixed chalice made obligatory. Contrary to the occidental custom, fasting on Saturday was forbidden. The mutilation of the Scriptures and the desecration of sacred places were severely condemned; likewise the use of the lamb as the symbol for Christ (a favourite symbol in the West).

The synod legislated also concerning marriage, bigamy, adultery, rape, abortion, seductive arts and obscenity. The theatre, the circus and gambling were unsparingly denounced, and soothsayers and jugglers, pagan festivals and customs, and pagan oaths were placed under the ban.

The council was confirmed by the emperor and accepted in the East; but the pope protested against various canons, chiefly those respecting the rank of Constantinople, clerical marriage, the Saturday fast, and the use of the symbol of lamb; and refused, despite express imperial command and threat, to accept the "Pseudo-Sexta." So that while the synod adopted a body of legislation that has continued to be authoritative for the Eastern Church, it did so at the cost of aggravating the irritation of the West, and by so much hastening the inevitable rupture of the church.

See Mansi xi. pp. 921-1024; Hardouin iii. pp. 1645-1716; Hefele, 2nd ed., iii. pp. 328-348.

5. The iconoclastic synods of 754 and 815, both of which promulgated harsh decrees against images and neither of which is recognized by the Latin Church, and the synod of 842, which repudiated the synod of 815, approved the second council of Nicaea, and restored the images, are all adequately treated in the article Iconoclasts.

See Mansi xii. pp. 575 sqq., xiii. pp. 210 sqq., xiv. pp. 111 sqq., 787 sqq.; Hardouin iv. pp. 330 sqq., 1045 sqq., 1457 sqq.; Hefele, 2nd ed. iv. pp. 1 sqq., 104 sqq.

6. The synods of 869 and 879, of which the former, regarded by the Latin Church as the eighth ecumenical council, condemned Photius as an usurper and restored Ignatius to the see of Constantinople; the latter, which the Greeks consider to have been the true eighth ecumenical council, held after the death of Ignatius and the reconciliation of Photius with the emperor, repudiated the synod of 869, restored Photius, and condemned all who would not recognize him. (For further details of these two synods see PHOTIUS.)

See Mansi xv. pp. 143-476 et passim, xvi. pp. 1-550, xvii. pp. 66-186, 365-530; Hardouin v. pp. 119-390, 749-1210, et passim, vi. pp. 19-87, 209-334; Hefele, 2nd ed., iv. pp. 228 sqq., 333 sqq., 435 sqq.; Hergenröther, *Photius* (Regensburg, 1867-1869).

(T. F. C.)

CONSTANTINUS, pope from 708 to 715, was a Syrian by birth and was consecrated pope in March 708. He was eager to assert the supremacy of the papal see; at the command of the emperor Justinian II. he visited Constantinople; and he died on the 9th of April 715.

CONSTANTIUS, FLAVIUS VALERIUS, commonly called CHLORUS (the Pale), an epithet due to the Byzantine historians, Roman emperor and father of Constantine the Great, was born about A.D. 250. He was of Illyrian origin; a fictitious connexion with the family of Claudius Gothicus was attributed to him by Constantine. Having distinguished himself by his military ability and his able and gentle rule of Dalmatia, he was, on the 1st of March 293, adopted and appointed Caesar by Maximian, whose step-daughter, Flavia Maximiana Theodora, he had married in 289 after renouncing his wife Helena (the mother of Constantine). In the distribution of the provinces Gaul and Britain were allotted to Constantius. In Britain Carausius and subsequently Allectus had declared themselves independent, and it was not till 296 that, by the defeat of Allectus, it was re-united with the empire. In 298 Constantius overthrew the Alamanni in the territory of the Lingones (Langres) and strengthened the Rhine frontier. During the persecution of the Christians in 303 he behaved with great humanity. He obtained the title of Augustus on the 1st of May 305, and died the following year shortly before the 25th of July at Eboracum (York) during an expedition against the Picts and Scots.

See Aurelius Victor, *De Caesaribus*, 39; Eutropius ix. 14-23; Zosimus ii. 7.

CONSTANTZA (*Constanta*), formerly known as Kustendji or Kustendje, a seaport on the Black Sea, and capital of the department of Constantza, Rumania; 140 m. E. by S. from Bucharest by rail. Pop. (1900) 12,725. When the Dobrudja was ceded to Rumania in 1878, Constantza was partly rebuilt. In its clean and broad streets there are many synagogues, mosques and churches, for half the inhabitants are Roman Catholics, Moslems, Armenians or Jews; the remainder being Orthodox Rumans and Greeks. In the vicinity there are mineral springs, and the sea-bathing also attracts many visitors in summer. The chief local industries are tanning and the manufacture of petroleum drums. The opening, in 1895, of the railway to Bucharest, which crosses the Danube by a bridge at Cerna Voda, brought Constantza a considerable transit trade in grain and petroleum, which are largely exported; coal and coke head the list of imports, followed by machinery, iron goods, and cotton and woollen fabrics. The harbour, protected by breakwaters, with a lighthouse at the entrance, is well defended from the north winds, but those from the south, south-east, and south-west prove sometimes highly dangerous. In 1902 it afforded 10 alongside berths for shipping. It had a depth of 22 ft. in the old or inner basin, and of 26 ft. in the new or outer basin, beside the quays. The railway runs along the quays. A weekly service between Constantza and Constantinople is conducted by state-owned steamers, including the fast mail and passenger boats in connexion with the Ostend and Orient expresses. In 1902, 576 vessels entered at Constantza, with a net registered tonnage of 641,737. The Black Sea squadron of the Rumanian fleet is stationed here.

Constantza is the Constantiana which was founded in honour of Constantia, sister of Constantine the Great (A.D. 274-337). It lies at the seaward end of the Great Wall of Trajan, and has evidently been surrounded by fortifications of its own. In spite of damage done by railway contractors (see Henry C. Barkley, *Between the Danube and the Black Sea*, 1876) there are considerable remains of ancient masonry—walls, pillars, &c. A number of inscriptions found in the town and its vicinity show that close by was Tomi, where the Roman poet Ovid (43 B.C.-A.D. 17) spent his last eight years in exile. A statue of Ovid stands in the main square of Constantza.

In regard to the Constantza inscriptions in general, see Allard, *La Bulgarie orientale* (Paris, 1866); Desjardins in *Ann. dell' istit. di corr. arch.* (1868); and a paper on Weickum's collection in *Sitzungsbericht* of the Munich Academy (1875).

CONSTELLATION (from the Lat. *constellatus*, studded with stars; *con*, with, and *stella*, a star), in astronomy, the name given to certain groupings of stars. The partition of the stellar expanse into areas characterized by specified stars can be traced back to a very remote antiquity. It is believed that the ultimate origin of the constellation figures and names is to be found in the corresponding systems in vogue among the primitive civilizations of the Euphrates valley—the Sumerians, Accadians and Babylonians; that these were carried westward into ancient Greece by the Phoenicians, and to the lands of Asia Minor by the Hittites, and that Hellenic culture in its turn introduced them into Arabia, Persia and India. From the earliest times the star-groups known as constellations, the smaller groups (parts of constellations) known as asterisms, and also individual stars, have received names connoting some meteorological phenomena, or symbolizing religious or mythological beliefs. At one time it was held that the constellation names and myths were of Greek origin; this view has now been disproved, and an examination of the Hellenic myths associated with the stars and star-groups in the light of the records revealed by the decipherment of Euphratean cuneiforms leads to the conclusion that in many, if not all, cases the Greek myth has a Euphratean parallel, and so renders it probable that the Greek constellation system and the cognate legends are primarily of Semitic or even pre-Semitic origin.

The origin and development of the grouping of the stars into constellations is more a matter of archaeological than of astronomical interest. It demands a careful study of the myths and religious thought of primitive peoples; and the tracing of the names from one language to another belongs to comparative philology.

The Sumerians and Accadians, the non-Semitic inhabitants of the Euphrates valley prior to the Babylonians, described the stars collectively as a “heavenly flock”; the sun was the “old sheep”; the seven planets were the “old-sheep stars”; the whole of the stars had certain “shepherds,” and *Sibzianna* (which, according to Sayce and Bosanquet, is the modern Arcturus, the brightest star in the northern sky) was the “star of the shepherds of the heavenly herds.” The Accadians bequeathed their system to the Babylonians, and cuneiform tablets and cylinders, boundary stones, and Euphratean art generally, point to the existence of a well-defined system of star names in their early history. From a detailed study of such records, in their nature of rather speculative value, R. Brown, junr. (*Primitive Constellations*, 1899) has compiled a Euphratean planisphere, which he regards as the mother of all others. The tablets examined range in date from 3000-500 B.C., and hence the system must be anterior to the earlier date. Of great importance is the *Creation Legend*, a cuneiform compiled from older records during the reign of Assur-bani-pal, c. 650 B.C., in which there occurs a passage interpretable as pointing to the acceptance of 36 constellations: 12 northern, 12 zodiacal and 12 southern. These constellations were arranged in three concentric annuli, the northern ones in an inner annulus subdivided into 60 degrees, the zodiacal ones into a medial annulus of 120 degrees, and the southern ones into an outer annulus of 240 degrees. Brown has suggested a correlation of the Euphratean names with those of the Greeks and moderns. His results may be exhibited in the following form:—the central line gives the modern equivalents of the names in the Euphratean zodiac; the upper line the modern equivalents of the northern paranatellons; and the lower line those of the southern paranatellons. The zodiacal constellations have an interest peculiarly their own; placed in or about the plane of the ecliptic, their rising and setting with the sun was observed with relation to weather changes and the more general subject of chronology, the twelve subdivisions of the year being correlated with the twelve divisions of the ecliptic (see ZODIAC).

Northern	Cassiopeia	Auriga	Cepheus	Ursa minor	Ursa major	Boötes	Serpentarius	Hercules	Lyra
Zodiacal	Aries	Taurus	Gemini	Cancer	Leo	Virgo	Libra	Scorpio	Sagittarius

Southern	Eridanus	Orion	Canis major	Argo	Hydra Crater	Corvus	Centaurus	Lupus	Ara

The Phoenicians—a race dominated by the spirit of commercial enterprise—appear to have studied the stars more especially with respect to their service to navigators; according to Homer "the stars were sent by Zeus as portents for mariners." But all their truly astronomical writings are lost, and only by a somewhat speculative piecing together of scattered evidences can an estimate of their knowledge be formed. The inter-relations of the Phoenicians with the early Hellenes were frequent and far-reaching, and in the Greek presentation of the legends concerning constellations a distinct Phoenician, and in turn Euphratean, element appears. One of the earliest examples of Greek literature extant, the *Theogonia* of Hesiod (c. 800 B.C.), appears to be a curious blending of Hellenic and Phoenician thought. Although not an astronomical work, several constellation subjects are introduced. In the same author's *Works and Days*, a treatise which is a sort of shepherd's calendar, there are distinct references to the Pleiades, Hyades, Orion, Sirius and Arcturus. It cannot be argued, however, that these were the only stars and constellations named in his time; the omission proves nothing. The same is true of the Homeric epics wherein the Pleiades, Hyades, Ursa major, Orion and Boötes are mentioned, and also of the stars and constellations mentioned in Job. Further support is given to the view that, in the main, the constellations were transmitted to the Greeks by the Phoenicians from Euphratean sources in the fact that Thales, the earliest Greek astronomer of any note, was of Phoenician descent. According to Callimachus he taught the Greeks to steer by Ursa minor instead of Ursa major; and other astronomical observations are assigned to him. But his writings are lost, as is also the case with those of Phocus the Samian, and the history of astronomy by Eudemus, the pupil of Aristotle; hence the paucity of our knowledge of Thales's astronomical learning.

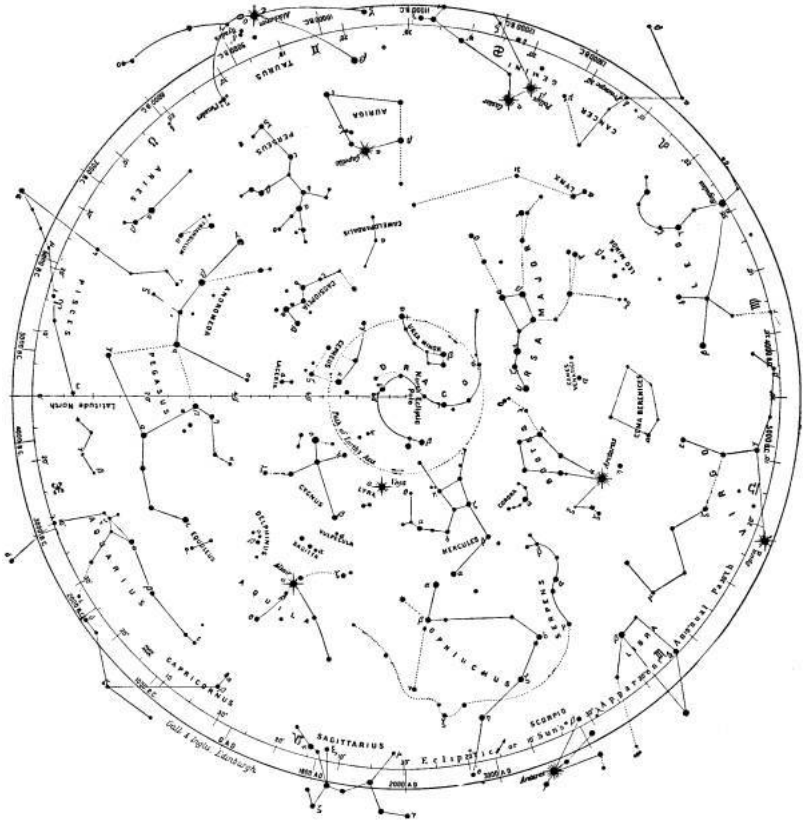
From the 6th century B.C. onwards, legends concerning the constellation subjects were frequently treated by the historians and poets. Aglaosthenes or Agaosthenes, an early writer, knew Ursa minor as Κυνόσουρα, Cynosura, and recorded the translation of Aquila; Epimenides the Cretan (c. 600 B.C.) recorded the translation of Capricornus and the star Capella; Pherecydes of Athens (c. 500-450 B.C.) recorded the legend of Orion, and stated the astronomical fact that when Orion sets Scorpio rises; Aeschylus (525-456 B.C.) and Hellanicus of Mytilene (c. 496-411 B.C.) narrate the legend of the seven Pleiades—the daughters of Atlas; and the latter states that the Hyades are named either from their orientation, which resembles υ (upsilon), "or because at their rising or setting Zeus rains"; and Hecataeus of Miletus (c. 470 B.C.) treated the legend of the Hydra.

In the 5th century B.C. the Athenian astronomer Euctemon, according to Geminus of Rhodes, compiled a weather calendar in which Aquarius, Aquila, Canis major, Corona, Cygnus, Delphinus, Lyra, Orion, Pegasus, Sagitta and the asterisms Hyades and Pleiades are mentioned, always, however, in relation to weather changes. The earliest Greek work which purported to treat the constellations *qua* constellations, of which we have certain knowledge, is the Φαινόμενα of Eudoxus of Cnidus (c. 403-350 B.C.). The original is lost, but a versification by Aratus (c. 270 B.C.), a poet at the court of Antigonus Gonatas, king of Macedonia, and an Ἐξήγησις or commentary by Hipparchus, are extant. In the Φαινόμενα of Aratus 44 constellations are enumerated, viz. 19 northern:—Ursa major, Ursa minor, Boötes, Draco, Cepheus, Cassiopeia, Andromeda, Perseus, Triangulum, Pegasus, Delphinus, Auriga, Hercules, Lyra, Cygnus, Aquila, Sagitta, Corona and Serpentarius; 13 central or zodiacal:—Aries, Taurus, Gemini, Cancer, Leo, Virgo, Libra, Scorpio, Sagittarius, Capricornus, Aquarius, Pisces and the Pleiades; and 12 southern:—Orion, Canis, Lepus, Argo, Cetus, Eridanus, Piscis australis, Ara, Centaurus, Hydra, Crater and Corvus. In this enumeration Serpens is included in Serpentarius and Lupus in Centaurus; these two constellations were separated by Hipparchus and, later, by Ptolemy. On the other hand, Aratus kept the Pleiades distinct from Taurus, but Hipparchus reduced these stars to an asterism. Aratus was no astronomer, while Hipparchus was; and from the fact that the latter adopted, with but trifling exceptions, the constellation system

portrayed by Aratus, it may be concluded that the system was already familiar in Greek thought. And three hundred years after Hipparchus, the Alexandrian astronomer Ptolemy adopted a very similar scheme in his uranometria, which appears in the seventh and eighth books of his *Almagest*, the catalogue being styled the Εκθεσις κανονική or "accepted version."

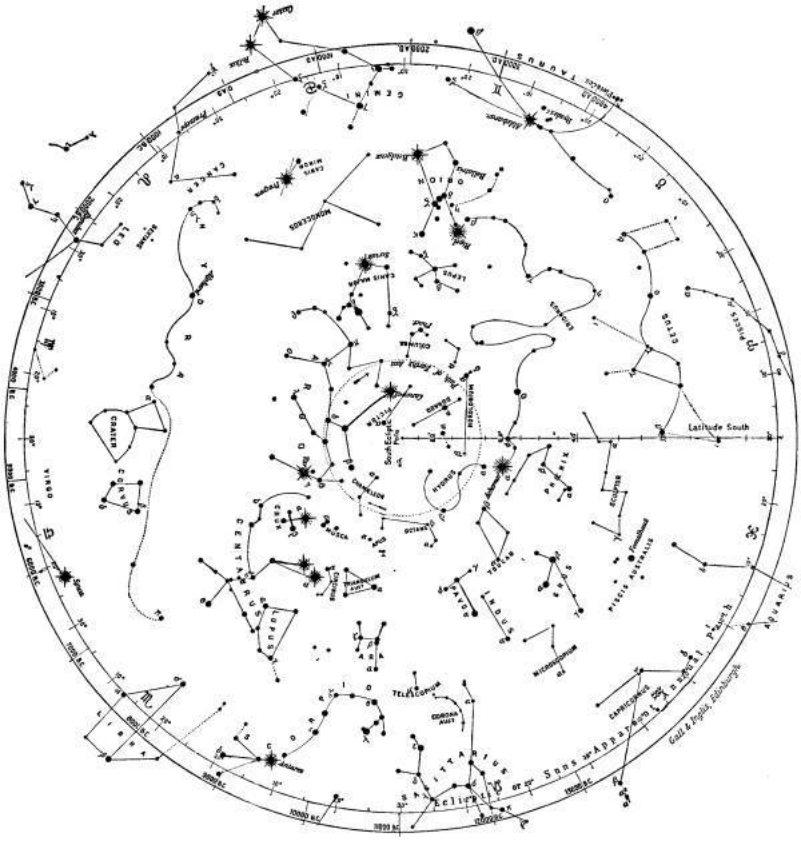
The *Almagest* has a dual interest: first, being the work of one primarily a commentator, it presents a crystallized epitome of all earlier knowledge; and secondly, it has served as a basis of subsequent star-catalogues.[1] The Ptolemaic catalogue embraces only those stars which were visible at Rhodes in the time of Hipparchus (c. 150 B.C.), the results being corrected for precession "by increasing the longitudes by 2° 40', and leaving the latitudes undisturbed" (Francis Baily, *Mem. R.A.S.*, 1843). The names and orientation of the constellations therein adopted are, with but few exceptions, identical with those used at the present day; and as it cannot be doubted that Ptolemy made only very few modifications in the system of Hipparchus, the names were adopted at least three centuries before the *Almagest* was compiled. The names in which Ptolemy differs from modern usage are:—Hercules (ἐν γόνασιν), Cygnus (Ὄρνις), Eridanus (Πόταμος), Lupus (Θηρίον), Pegasus (Ἵππος), Equuleus (Ἵππου προτομή), Canis minor (Προκύων), and Libra (Χηλαί), although ξυγός is used for the same constellation in other parts of the *Almagest*). The following table gives the names of the constellations as they occur in (1) modern catalogues; (2) Ptolemy (A.D. 150); (3) Ulugh Beg (1437); (4) Tycho Brahe (1628); the last column gives the English equivalent of the modern name.

The reverence and authority which was accorded the famous compilation of the Alexandrian astronomer is well evidenced by the catalogue of the Tatar Ulugh Beg, the Arabian names there adopted being equivalent to the Ptolemaic names in nearly every case; this is also shown in the Latin translations given below. Tycho Brahe, when compiling his catalogue of stars, was unable to observe Lupus, Ara, Corona australis and Piscis australis, on account of the latitude of Uranienburg; and hence these constellations are omitted from his catalogue. He diverged from Ptolemy when he placed the asterisms Coma Berenices and Antinous upon the level of formal constellations, Ptolemy having regarded these asterisms as unformed stars (ἀμόρφωτοι). The next innovator of moment was Johann Bayer, a German astronomer, who published a *Uranometria* in 1603, in which twelve constellations, all in the southern hemisphere, were added to Ptolemy's forty-eight, viz. Apis (or Musca) (Bee), Avis Indica (Bird of Paradise), Chameleon, Dorado (Sword-fish), Grus (Crane), Hydrus (Water-snake), Indus (Indian), Pavo (Peacock), Phoenix, Piscis volans (Flying fish), Toucan, Triangulum australe. According to W. Lynn (*Observatory*, 1886, p. 255), Bayer adapted this part of his catalogue from the observations of the Dutch navigator Petrus Theodori (or Pieter Dirchsz Keyser), who died in 1596 off Java. The *Coelum stellatum Christianum* of Julius Schiller (1627) is noteworthy for the attempt made to replace the names connoting mythological and pagan ideas by the names of apostles, saints, popes, bishops, and other dignitaries of the church, &c. Aries became St Peter; Taurus, St Andrew; Andromeda, the Holy Sepulchre; Lyra, the Manger; Canis major, David; and so on. This innovation (with which the introduction of the twelve apostles into the solar zodiac by the Venerable Bede may be compared) was shortlived. According to Charles Hutton [*Math. Dict.* i. 328 (1795)] the editions published in 1654 and 1661 had reverted to the Greek names; on the other hand, Camille Flammarion (*Popular Astronomy*, p. 375) quotes an illuminated folio of 1661, which represents "the sky delivered from pagans and peopled with Christians." A similar confusion was attempted by E. Weigelius, who sought to introduce a *Coelum heraldicum*, in which the constellations were figured as the arms or insignia of European dynasties, and by symbols of commerce.



CONSTELLATIONS OF THE NORTHERN HEMISPHERE.

PLATE II.



CONSTELLATIONS OF THE SOUTHERN HEMISPHERE.

	Modern.	Ptolemy.		Ulugh Beg.		Tycho Brahe.	
Northern constell-ations (21).	Ursa minor	῾Αρκτου μικρᾶς	ἀστερισμός	Stelae	Ursi minoris	Ursa minor, Cynosura	
	Ursa major	῾Αρκτου μεγάλης	"	"	Ursi majoris	Ursa major, Helice	
	Draco	Δράκοντος	"	"	Draconis	Draco	
	Cepheus	Κηφέως	"	"	Cephei	Cepheus	
	Boötes	Βοώτου	"	"	Vociferatoris	Boötes, Arctophylax	
	Corona borealis	Στεφάνου βορείου	"	"	Coronae or Phecca	Corona borea	
	Hercules	Τοῦ ἐν γόνασιν	"	"	Incumbentis genubus	Engonasi, Hercules	
	Lyra	Λύρας	"	"	τοῦ Shelyāk or Testudo	Lyra, Vultur cadens	
	Cygnus	῾Ορνιθος	"	"	Gallinae	Olor, Cygnus	
	Cassiopeia	Κασσιεπείας	"	"	Inthronatae	Cassiopeia	
	Perseus	Περσέως	"	"	Bershaush or Portans Caput Larvae	Perseus	
	Auriga	Ἡνιόχου	"	"	Tenentis habenas	Auriga, Heniochus, Erichthonius	
	Serpentarius	Ὀφιούχου	"	"	Serpentarii	Ophiuchus, Serpentarius	
	Serpens	῾ρεωχό φιούχου	"	"	Serpentis	Serpens ophiuchi	
	Sagitta	Ὀιστοῦ	"	"	Sagittae	Sagitta or Telum	
	Aquila	Ἀετοῦ	"	"	Aquilae	Aquila or Vultur volans	
	Delphinus	Δελφῖνος	"	"	Delphini	Delphinus	
	Equuleus	῾Ιππου προτομῆς	"	"	Sectionis	Equuleus, Equi sectio	
	Pegasus	῾Ιππου	"	"	Equi majoris	Pegasus, Equus alatus	
	Andromeda	Ἀνδρομέδας	"	"	Mulieris catenatae	Andromeda	
	Triangulum	Τριγώνου	"	"	Trianguli	Triangulus, Deltoton	
Zodiacal constell-ations (12).	Aries	Κριοῦ	"	"	Arietis	Aries	
	Taurus	Ταύρου	"	"	Tauri	Taurus	
	Gemini	Διδύμων	"	"	Gemellorum	Gemini	

	Cancer	Καρκίνου	"	"	Cancri	Cancer	C
	Leo	Λέοντος	"	"	Leonis	Leo	L
	Virgo	Παρθένου	"	"	Virginis, Sumbela	Virgo	V
	Libra	Χηλῶν	"	"	Librae	Libra	L
	Scorpio	Σκορπίου	"	"	Scorpionis	Scorpius	S
	Sagittarius	Τοξότου	"	"	Sagittarii, Arcum	Sagittarius	A
	Capricornus	Αἰγόκερωτος	"	"	Capricorni	Capricornus	C
	Aquarius	Ὑδροχόου	"	"	Effusoris aquae, Situla	Aquarius	V
	Pisces	Ἰχθύων	"	"	Piscis	Pisces	P
Southern constell-ations (15).	Cetus	Κήτους	"	"	Ceti	Cete	S
	Orion	Ὡρίονος	"	"	Gigantis	Orion	O
	Eridanus	Ποταμοῦ	"	"	Fluminis	Eridanus fluvius	E
	Lepus	Λαγῳοῦ	"	"	Leporis	Lepus	L
	Canis major	Κυνὸς	"	"	Canis majoris	Canis major	C
	Canis minor	Προκυνὸς	"	"	Canis minoris	Canis minor, Procyon	P
	Argo	Ἀργοῦς	"	"	Navis	Argo navis	S
	Hydra	Ὕδρου	"	"	Hydri	Hydra	S
	Crater	Κρατῆρος	"	"	Craterae	Crater	P
	Corvus	Κόρακος	"	"	Corvi	Corvus	C
	Centaurus	Κενταύρου	"	"	Centauri	Centaurus, Chiron	C
	Lupus	Θηρίου	"	"	Ferae		V
	Ara	Θυμιατηρίου	"	"	Thuribuli		C
	Corona australis	Στεφάνου νοτίου	"	"	Coronae australis		S
	Piscis australis	Ἰχθύος νοτίου	"	"	Piscis australis		S

In Edmund Halley's southern catalogue (*Catalogus stellarum australium*), published in 1679 and incorporated in Flamsteed's *Historia coelestis* (1725), the following constellations are named:—Piscis australis, Columba Noachi, Argo navis, Robur Caroli, Ara, Corona australis, Grus, Phoenix, Pavo, Apus or Avis Indica, Musca apis, Chameleon, Triangulum australe, Piscis volans, Dorado or Xiphias, Toucan or Anser Americanus, and Hydrus. Flamsteed's maps also contained Mons Menelai. This list contains nothing new except Robur Caroli, since Columba Noachi (Noah's dove) had been raised to the skies by Bartschius in 1624. The constellation Robur Caroli and also the star Cor Caroli (α Canum Venaticorum) were named by Halley in honour of Charles II. of England.

In 1690 two posthumous works of Johann Hevelius (1611-1687), the *Firmamentum sobiescianum* and *Prodromus astronomiae*, added several new constellations to the list, viz. Canes venatici (the Greyhounds), Lacerta (the Lizard), Leo minor (Little Lion), Lynx, Sextans Uraniae, Scutum or Clypeus Sobieskii (the shield of Sobieski), Vulpecula et Anser (Fox and Goose), Cerberus, Camelopardus (Giraffe), and Monoceros (Unicorn); the last two were originally due to Jacobus Bartschius. In 1679 Augustine Royer introduced the most interesting of the constellations of the southern hemisphere, the Crux australis or Southern Cross. He also suggested Nubes major, Nubes minor, and Lilium, and re-named Canes venatici the river Jordan, and Vulpecula et Anser the river Tigris, but these innovations met with no approval. The Magellanic clouds, a collection of nebulae, stars and star-clusters in the neighbourhood of the south pole, were so named by Hevelius in honour of the navigator Ferdinand Magellan.

Many other star-groupings have been proposed from time to time; in some cases a separate name has been given to a part of an authoritatively accepted constellation, e.g. Ensis Orionis, the sword of Orion, or an ancient constellation may be subdivided, e.g. Argo (ship) into Argo, Malus (mast), Vela (sails), Puppis (stern), Carina (keel); and whereas some of the rearrangements, which have been mostly confined to the southern hemisphere, have been accepted, many, reflecting nothing but idiosyncrasies of the proposers, have deservedly dropped into oblivion. Nicolas Louis de Lacaille, who made extended observations of the southern stars in 1751 and in the

following years, and whose results were embodied in his posthumous *Coelum australe stelliferum* (1763), introduced the following new constellations:—Apparatus sculptoris (Sculptor's workshop), Fornax chemica (Chemical furnace), Horologium (Clock), Reticulus rhomboidalis (Rhomboidal net), Caela sculptoris (Sculptor's chisels), Equuleus pictoris (Painter's easel), Pyxis nautica (Mariner's compass), Antlia pneumatica (Air pump), Octans (Octant), Circinus (Compasses), Norma *alias* Quadra Euclidis (Square), Telescopium (Telescope), Microscopium (Microscope) and Mons Mensae (Table Mountain). Pierre Charles Lemonnier in 1776 introduced Tarandus (Reindeer), and Solitarius; J. J. L. de Lalande introduced Le Messier (after the astronomer Charles Messier) (1776), Quadrans muralis (Mural quadrant) (1795), Globus aerostaticus (Air balloon) (1798), and Felis (the Cat) (1799). Martin Poczobut introduced in 1777 Taurus Poniatovskii; Bode introduced the Honores Frederici (Honours of Frederick) (1786), Telescopium Herschelii (Telescope of Herschel) (1787), Machina electrica (Electrical machine) (1790), Officina typographica (Printing press) (1799), and Lochium funis (Log line); and M. Hell formed the Psalterium Georgianum (George's lute).

The following list gives the names of the constellations now usually employed: they are divided into three groups:—north of the zodiac, in the zodiac, south of the zodiac. Those marked with an asterisk have separate articles.

Northern (28).

*Andromeda	*Cepheus	*Hercules	Pegasus
*Aquila	*Coma Berenices	Lacerta	*Perseus
*Auriga	*Corona borealis	*Leo minor	*Sagitta
*Boötes	*Cygnus	Lynx	Serpens
Camelopardus	*Delphinus	*Lyra	Triangulum
*Canes venatici	Draco	{ Ophiuchus	*Ursa major
*Cassiopeia	Equuleus	{*Serpentarius	*Ursa minor
			*Vulpecula et Anser

Zodiacal (12).

*Aquarius	*Capricornus	*Libra	*Scorpio
*Aries	*Gemini	*Pisces	*Taurus
*Cancer	*Leo	*Sagittarius	*Virgo.

Southern (49).

Antlia (pneumatica)	Corona australis	Lepus	Pictor (Equuleus pictoris)
Apus	Corvus	Lupus	Piscis australis
*Ara	Crater	Mons Mensae	Recticulum
Caela sculptoris(Caelum)	Dorado	Microscopium	Sculptor (Apparatus sculptoris)
*Canis major	*Eridanus	Monoceros	Scutum Sobieskii
Canis minor	Fornax chemica	Musca australis	Sextans
Carina	Grus	Norma	Telescopium
*Centaurus	Horologium	Octans	Toucan
*Cetus	*Hydra	*Orion	Triangulum australe
Chameleon	Hydrus	Pavo	Vela
Circinus	Indus	Phoenix	Volans (Piscis volans)
Columba Noachi			

(C. E.*)

1 The historical development of star-catalogues in general, regarded as statistics of the co-ordinates, &c., of stars, is given in the historical section of the article Astronomy. See also E. B. Knobel, "Chronology of Star Catalogues," *Mem. R.A.S.* (1877).

CONSTIPATION (from Lat. *constipare*, to press closely together, whence also the adjective "costive"), the condition of body when the faeces are unduly retained, or there is difficulty in evacuation, tightness of the bowels (see Digestive Organs; and Therapeutics). It may be due to constitutional peculiarities, sedentary or irregular habits, improper diet, &c. The treatment varies with individual cases, according to the cause at work, laxatives, dieting, massage, &c., being prescribed.

CONSTITUENCY (from "constituent," that which forms a necessary part of a thing; Lat. *constituere*, to create), a political term for the body of electors who choose a representative for parliament or for any other public assembly, for the place or district possessing the right to elect a representative, and for the residents generally, apart from their voting powers, in such a locality. The term is also applied, in a transferred sense, to the readers of a particular newspaper, the customers of a business and the like.

CONSTITUTION AND CONSTITUTIONAL LAW. The word constitution (*constitutio*) in the time of the Roman empire signified a collection of laws or ordinances made by the emperor. We find the word used in the same sense in the early history of English law, *e.g.* the Constitutions of Clarendon. In its modern use constitution has been restricted to those rules which concern the political structure of society. If we take the accepted definition of a law as a command imposed by a sovereign on the subject, the constitution would consist of the rules which point out where the sovereign is to be found, the form in which his powers are exercised, and the relations of the different members of the sovereign body to each other where it consists of more persons than one. In every independent political society, it is assumed by these definitions, there will be found somewhere or other a sovereign, whether that sovereign be a single person, or a body of persons, or several bodies of persons. The commands imposed by the sovereign person or body on the rest of the society are positive laws, properly so called. The sovereign body not only makes laws, but has two other leading functions, viz. those of judicature and administration. Legislation is for the most part performed directly by the sovereign body itself; judicature and administration, for the most part, by delegates. The constitution of a society, accordingly, would show how the sovereign body is composed, and what are the relations of its members *inter se*, and how the sovereign functions of legislation, judicature and administration are exercised. Constitutional law consists of the rules relating to these subjects, and these rules may either be laws properly so called, or they may not—i.e. they may or may not be commands imposed by the sovereign body itself. The English constitutional rule, for example, that the king and

parliament are the sovereign, cannot be called a law; for a law presupposes the fact which it asserts. And other rules, which are constantly observed in practice, but have never been enacted by the sovereign power, are in the same way constitutional laws which are not laws. It is an undoubted rule of the English constitution that the king shall not refuse his assent to a bill which has passed both Houses of Parliament, but it is certainly not a law. Should the king veto such a bill his action would be unconstitutional, but not illegal. On the other hand the rules relating to the election of members to the House of Commons are nearly all positive laws strictly so called. Constitutional law, as the phrase is commonly used, would include all the laws dealing with the sovereign body in the exercise of its various functions, and all the rules, not being laws properly so called, relating to the same subject.

The above is an attempt to indicate the meaning of the phrases in their stricter or more technical uses. Some wider meanings may be noticed. In the phrase constitutional government, a form of government based on certain principles which may roughly be called popular is the leading idea. Great Britain, Switzerland, the United States, are all constitutional governments in this sense of the word. A country where a large portion of the people has some considerable share in the supreme power would be a constitutional country. On the other hand, constitutional, as applied to governments, may mean stable as opposed to unstable and anarchic societies. Again, as a term of party politics, constitutional has come to mean, in England, not obedience to constitutional rules as above described, but adherence to the existing type of the constitution or to some conspicuous portions thereof,—in other words, conservative.

The ideas associated with constitution and constitutionalism are thus, it will be seen, mainly of modern and European origin. They are wholly inapplicable to the primitive and simple societies of the present or of the former times. The discussion of forms of government occupies a large space in the writings of the Greek philosophers,—a fact which is to be explained by the existence among the Greeks of many independent political communities, variously organized, and more or less democratic in character. Between the political problems of the smaller societies and those of the great European nations there is no useful parallel to be drawn, although the predominance of classical learning made it the fashion for a long time to apply Greek speculations on the nature of monarchy, aristocracy, and democracy to public questions in modern Europe. Representation (q.v.), the characteristic principle of European constitutions, has, of course, no place in societies which were not too large to admit of every free citizen participating personally in the business of government. Nor is there much in the politics or the political literature of the Romans to compare with the constitutions of modern states. Their political system, almost from the beginning of empire, was ruled absolutely by a small assembly or by one man.

The impetus to constitutional government in modern times has to a large extent come from England, and it is from English politics that the phrase and its associations have been borrowed. England has offered to the world the one conspicuous example of a long, continuous, and orderly development of political institutions. The early date at which the principle of self-government was established in England, the steady growth of the principle, the absence of civil dissension, and the preservation in the midst of change of so much of the old organization, have given its constitution a great influence over the ideas of politicians in other countries. This fact is expressed in the proverbial phrase—"England is the mother of parliaments." It would not be difficult to show that the leading features of the constitutions now established in other nations have been based on, or defended by, considerations arising from the political history of England.

In one important respect England differs conspicuously from most other countries. Her constitution is to a large extent *unwritten*, using the word in much the same sense as when we speak of unwritten law. Its rules can be found in no written document, but depend, as so much of English law does, on precedent modified by a constant process of interpretation. Many rules of the constitution have in fact a purely legal history, that is to say, they have been developed by the law courts, as part of the general body of the common law. Others have in a similar way been developed by the practice of parliament. Both Houses, in fact, have exhibited the same spirit of adherence to

precedent, coupled with a power of modifying precedent to suit circumstances, which distinguishes the judicial tribunals. In a constitutional crisis the House of Commons appoints a committee to "search its journals for precedents," just as the court of king's bench would examine the records of its own decisions. And just as the law, while professing to remain the same, is in process of constant change, so, too, the unwritten constitution is, without any acknowledgment of the fact, constantly taking up new ground.

In contrast with the mobility of an unwritten constitution is the fixity of a constitution written out, like that of the United States or Switzerland, in one authoritative code. The constitution of the United States, drawn up at Philadelphia in 1787, is contained in a code of articles. It was ratified separately by each state, and thenceforward became the positive and exclusive statement of the constitution. The legislative powers of the legislature are not to extend to certain kinds of bills, e.g. *ex post facto* bills; the president has a veto which can only be overcome by a majority of two-thirds in both Houses; the constitution itself can only be changed in any particular by the consent of the legislatures or conventions of three-fourths of the several states; and finally the judges of the Supreme Court are to decide in all disputed cases whether an act of the legislature is permitted by the constitution or not.

The constitution of the United States is the supreme law of the land as to the matters which it embraces. The constitution of each state is the supreme law of the state, except so far as it may be controlled by the constitution of the United States. Every statute in conflict with the constitution to which it is subordinate is void so far as this conflict extends. If it concerns only a distinct and separable part of the statute, that part only is void. Every court before which a statutory right or defence is asserted has the power to inquire whether the statute in question is or is not in conflict with the paramount constitution. This power belongs even to a justice of the peace in trying a cause. He sits to administer the law, and it is for him to determine what is the law. Inferior courts commonly decline to hold a statute unconstitutional, even if there may appear to be substantial grounds for such a decision. The presumption is always in favour of the validity of the law, and they generally prefer to leave the responsibility of declaring it void to the higher courts.

The judges of the state courts are bound by their oath of office to support the constitution of the United States. They have an equal right with those of the United States to determine whether or how far it affects any matter brought in question in any action. So, vice versa, the judges of the United States courts, if the point comes up on a trial before them, have the right to determine whether or how far the constitution of a state invalidates a statute of the state. They, however, are ordinarily bound to follow the views of the state courts on such a question. They are not bound by any decision of a state court as to the effect of the constitution of the United States on a state statute or any other matter. This judicial power of declaring a statute void because unconstitutional has been not infrequently exercised, from the time when the first state constitutions were adopted.

Juries in criminal causes are sometimes made by American statutes or recognized by American practice as judges of the law as well as the fact. The better opinion is that this does not make them judges of whether a law on which the prosecution rests violates the paramount constitution and is therefore void (*United States* v. *Callender*, Wharton's *State Trials*, 688; *State* v. *Main*, 69 Connecticut Reports, 123, 128).

If a state court decides a point of constitutional law, set up under the constitution of the United States, against the party relying upon it, and this decision is affirmed by the state court of last resort, he may sue out a writ of error, and so bring his case before the Supreme Court of the United States. If the state decision be in his favour, the other side cannot resort to like proceedings.

A decree of the Supreme Court of the United States on a point of construction arising under the constitution of the United States settles it for all courts, state and national.

The salient characteristic of the United States constitution is, perhaps, its formidable apparatus of provisions against change; and, in fact, only 15 constitutional amendments had been adopted from 1789 up to 1909, the last being in 1870. In the same period the unwritten constitution of England has made a most marked advance, chiefly in the direction of democratizing the monarchy, and diminishing the powers of the House of Lords. The House of Commons has continuously asserted its legislative predominance, and has reduced the other House to the position of a revising chamber, which in the last resort, however, can produce a legislative deadlock, subject to the results of a new general election (see PARLIAMENT). And the cabinet, which depends on the support of the House of Commons, has become more and more the executive council of the realm. One conspicuous feature of the English constitution, by which it is broadly distinguished from written or artificial constitutions, is the presence throughout its entire extent of legal fictions. The influence of the lawyers on the progress of the constitution has already been noticed, and is nowhere more clearly shown than in this peculiarity of its structure. As in the common law, so in the constitution, change has been effected in substance without any corresponding change in terminology. There is hardly one of the phrases used to describe the position of the crown which can be understood in its literal sense, and many of them are currently accepted in more senses than one. The American constitution of 1789 reproduced, however, in essentials, and with necessary modifications, the contemporary British model, and, where it did so, has preserved the old conception of what was then the British system of Government. The position and powers of the president were a fair counterpart of the royal prerogative of that day; the two houses of Congress corresponded sufficiently well to the House of Lords and the House of Commons, allowing for the absence of the elements of hereditary rank and territorial influence. While the English constitution has changed much, the American constitution has changed very little in these respects. Allowing for the more democratic character of the constituencies, the organization of the supreme power in the United States is nearer the English type of the 18th century—is, in fact, less elastic than in the United Kingdom.

On the other hand, it is not uncommon to misinterpret the rigidity of the United States constitution, from a regard rather to the theory which its text suggests than to the practical working of the machine. For the letter of the constitution has to some extent been modified, if not technically amended, in various respects by judicial interpretation, and by use and wont (e.g. as regards the election of the president). This side of the matter may be studied in C. G. Tiedeman's work cited below. Moreover, even in respect of the 18th-century British character attaching to the constitution, as drawn up in 1787, it has to be remembered that this was not taken direct from England. As several American constitutional historians have elaborately shown (e.g. A. C. McLaughlin, in *The Confederation and the Constitution*, 1905), the English idea had already been developed in various directions during the preceding colonial period, and the constitution really represented the English constitutional usage *as known in America*, into which the Philadelphia convention introduced new features corresponding to the prevailing civil conditions or suggested by English analogy. It is important to emphasize this point, since the resemblance of the American constitution of 1789 to the contemporary English constitution has sometimes been exaggerated; but the fact remains that the written constitution has been less susceptible of development than the unwritten.

Between England and some other constitutional countries a difference of much constitutional importance is to be found in the terms on which the component parts of the country were brought together. All great societies have been produced by the aggregation of small societies into larger and larger groups. In England the process of consolidation was completed before the constitution settled down into its present form. In the United States, on the other hand, in Switzerland, and in Germany the constitution is in form an alliance among a number of separate states, each of which may have a constitution and laws of its own for local purposes. In federal governments it remains a question how far the independence of individual states has been sacrificed by submission to a constitution. In the United States constitutional progress is hampered by the necessity thus created of having every amendment ratified by the separate vote of three-fourths of the states.

See also GOVERNMENT; SOVEREIGNTY; CABINET; PREROGATIVE, &c., and the section on Government or Constitution in the articles on the various countries. The standard work on the English constitution is Sir William Anson's *Law and Custom of the Constitution* (1st ed. 1886; 3rd ed. 1909); see also A. L. Lowell, *The Government of England* (1908); W. Bagehot, *The English Constitution*; S. Low, *The Governance of England* (1904); A. V. Dicey, *The Law of the Constitution* (7th ed. 1909); W. Stubbs, *Constitutional History of England* (1878); R. Gneist, *History of the English Constitution* (Engl. trans. 1886); J. Macy, *The English Constitution* (New York, 1897); E. W. Ridges, *Constitutional Law of England* (1905); F. W. Maitland, *Constitutional History of England* (1908); G. B. Adams and H. M. Stephens, *Select Documents of English Constitutional History* (New York, 1901). For America, see C. E. Stevens, *Sources of the Constitution of the United States* (London and New York, 1894); G. T. Curtis, *Constitutional History of the United States* (2 vols., New York, 1889-1896); T. McI. Cooley, *General Principles of Constitutional Law in the United States* (Boston, 1880; 3rd ed. 1898); S. G. Fisher, *Evolution of the Constitution of the United States* (Philadelphia, 1897); J. I. C. Hare, *American Constitutional Law* (2 vols., Boston, 1889); J. F. Jameson (ed.), *Essays on the Constitutional History of the United States in the Formative Period, 1775-1789* (Boston, 1889); W. M. Meigs, *Growth of the Constitution in the Federal Convention of 1787* (Philadelphia, 1900); and C. G. Tiedeman, *Unwritten Constitution of the United States* (New York, 1890). Also A. L. Lowell, *Government and Parties in Continental Europe* (2 vols., 1896); W. F. *Dodd, Modern Constitutions* (2 vols., Chicago, 1909), a collection of the fundamental laws of twenty-two of the most important countries.

"CONSTITUTION OF ATHENS" (Ἀθηναίων πολιτεία), a work attributed to the philosopher Aristotle (384-322 B.C.), forming one of a series of *Constitutions* (πολιτείαι), 158 in number, which treated of the institutions of the various states in the Greek world. It was extant until the 7th century of our era, or to an even later date, but was subsequently lost. A copy of this treatise, written in four different hands upon

four rolls of papyrus, and dating from the end of the 1st century A.D., was discovered in Egypt, and acquired by the trustees of the British Museum, for whom it was edited by F. G. Kenyon, assistant in the manuscript department, and published in January 1891. Some very imperfect fragments of another copy had been acquired by the Egyptian Museum at Berlin, and were published in 1880.

Authorship.—It may be regarded as now established that the treatise discovered in Egypt is identical with the work upon the constitution of Athens that passed in antiquity under the name of Aristotle. The evidence derived from a comparison of the British Museum papyrus with the quotations from the lost work of Aristotle's which are found in scholiasts and grammarians is conclusive. Of fifty-eight quotations from Aristotle's work, fifty-five occur in the papyrus. Of thirty-three quotations from Aristotle, which relate to matters connected with the constitution, or the constitutional history of Athens, although they are not expressly referred to the Ἀθηναίων πολιτεία, twenty-three are found in the papyrus. Of those not found in the papyrus, the majority appear to have come either from the beginning of the treatise, which is wanting in the papyrus, or from the latter portion of it, which is mutilated. The coincidence, therefore, is as nearly as possible complete. It may also be regarded as established by internal evidence that the treatise was composed during the interval between Aristotle's return to Athens in 335 B.C. and his death in 322. There are two passages which give us the latter year as the *terminus ad quem*, viz. c. 42. 1 and c. 62. 2. In the former passage the democracy which is about to be described is spoken of as the "present constitution" (ἡ νῦν κατάστασις τῆς πολιτείας). The democratic constitution was abolished, and a timocracy established, on the surrender of Athens to Antipater, at the end of the Lamian War, in the autumn of 322. At the same time Samos was lost; it is still reckoned, however, among the Athenian possessions in the latter passage. On the other hand, the foreign possessions of Athens are limited to Lemnos, Imbros, Scyros, Delos and Samos. This could only apply to the period after Chaeronea (338 B.C.). In c. 61. 1, again, mention is made of a special Strategus ἐπὶ τὰς συμμορίας; but it can be proved from inscriptions that down to the year 334 the generals were *collectively* concerned with the symmories. Finally, in c. 54. 7 an event is dated by the archonship of Cephisophon (329). We thus get the years 329 and 322 as fixing the limits of the period to which the composition of the work must be assigned. It follows that, whether it is by Aristotle or not, its date is later than that of the *Politics*, in which there is no reference to any event subsequent to the death of Philip in 336.

The only question as to authorship that can fairly be raised is the question whether it is by Aristotle or by a pupil; i.e. as to the sense in which it is "Aristotelian." The argument on the two sides may be summarized as follows:—

Against.—(i.) The occurrence of non-Aristotelian words and phrases and the absence of turns of expression characteristic of the undisputed writings of Aristotle. (ii.) The occurrence of statements contradictory of views found in the *Politics*; e.g. c. 4 (Constitution of Draco) compared with *Pol.* 1274 b 15 (Δράκοντος νόμοι μέν εἰσι, πολιτείᾳ δ᾽ ὑπαρχούσῃ τοὺς νόμους ἔθηκεν); c. 8. 1 (the archons appointed by lot out of selected candidates) compared with *Pol.* 1274 a 17, and 1281 b 31 (the archons elected by the *demos*); c. 17. 1 (total length of Peisistratus' reign, 19 years) compared with *Pol.* 1315 b 32 (total length, 17 years); c. 21. 6 (Cleisthenes left the clan and phratries unaltered) compared with *Pol.* 1319 b 20 (Cleisthenes increased the number of the phratries); c. 21. 2 and 4 compared with *Pol.* 1275 b 37 (different views as to the class admitted to citizenship by Cleisthenes). It will be observed that the instances quoted relate to the most famous names in the early history of Athens, viz. Draco, Solon, Peisistratus and Cleisthenes. (iii.) Arguments drawn from the style, composition and general character of the work, which are alleged to be unworthy of the author of the undoubtedly genuine writings. There is no sense of proportion (contrast the space devoted to Peisistratus and his sons, or to the Four Hundred and the Thirty, with the inadequate treatment of the period between the Persian and Peloponnesian Wars); there is a lack of historical insight and an uncritical acceptance of erroneous views; and the anecdotic element is unduly prominent. These considerations led several of the earlier critics to deny the Aristotelian authorship, e.g. the editors of the Dutch edition of the text, van Herwerden and van Leeuwen; Rühl, Cauer and Schvarcz in Germany; H. Richards and others in England.

For.—(i.) The consensus of antiquity. Every ancient writer who mentions the *Constitution* attributes it to Aristotle, while no writer is known to have questioned its genuineness. (ii.) The coincidence of the date assigned to its composition on internal grounds with the date of Aristotle's second residence in Athens. (iii.) Parallelisms of thought or expression with passages in the *Politics*; e.g. c. 16. 2 and 3 compared with *Pol.* 1318 b 14 and 1319 a 30; the general view of Solon's legislation compared with *Pol.* 1296 b 1; c. 27. 3 compared with *Pol.* 1274 a 9. To argument (i.) against the authorship, it is replied that the *Constitution* is an historical work, intended for popular use; differences in style and terminology from those of a philosophical treatise, such as

the *Politics*, are to be expected. To argument (ii.) it is replied that, as the *Constitution* is a later work than the *Politics*, a change of view upon particular points is not surprising. These considerations have led the great majority of writers upon the subject to attribute the work to Aristotle himself. On this side are found Kenyon and Sandys among English scholars, and in Germany, Wilamowitz, Blass, Gilbert, Bauer, Bruno Keil, Busolt, E. Meyer, and many others. On the whole, it can hardly be doubted that the view which is supported by so great a weight of authority is the correct one. The arguments advanced on the other side are not to be lightly set aside, but they can scarcely outweigh the combination of external and internal evidence in favour of the attribution to Aristotle. An attentive study of the parallel passages in the *Politics* will go a long way towards carrying conviction. It is true that a series such as the *Constitutions* might well be entrusted to pupils working under the direction of their master. It is also true, however, that the *Constitution of Athens* must have been incomparably the most important of the series and the one that would be most naturally reserved for the master's hand. There are no traces in the treatise either of variety of authorship or of incompleteness, though there are evidences of interpolation.

Contents.—The treatise consists of two parts, one historical, and the other descriptive. The first forty-one chapters compose the former part, the remainder of the work the latter. The first part comprised an account of the original constitution of Athens, and of the eleven changes through which it successively passed (see c. 41). The papyrus, however, is imperfect at the beginning (the manuscript from which it was copied appears to have been similarly defective), the text commencing in the middle of a sentence which relates to the trial and banishment of the Alcmeonidae for their part in the affair of Cylon. The missing chapters must have contained a sketch of the original constitution, and of the changes introduced in the time of Ion and Theseus.

The following is an abstract of Part I. in its present form. Chapters 2, 3, description of the constitution before the time of Draco. 4, Draco's constitution. 5-12, reforms of Solon. 13, party feuds after the legislation of Solon. 14-19, the rule of Peisistratus and his sons. 20, 21, the reforms of Cleisthenes. 22, changes introduced between Cleisthenes and the invasion of Xerxes. 23, 24, the supremacy of the Areopagus, 479-461 B.C. 25, its overthrow by Ephialtes. 26, 27, changes introduced in the time of Pericles. 28, the rise of the demagogues. 29-33, the revolution of the Four Hundred. 34-40, the government of the Thirty. 41, list of the successive changes in the constitution. It may be noted that the reforms of Solon, the tyranny of Peisistratus and

his sons, and the revolutions of the Four Hundred and the Thirty, together occupy considerably more than two-thirds of Part I.

Part II. describes the constitution as it existed at the period of the composition of the treatise (329-322 B.C.). It begins with an account of the conditions of citizenship and of the training of the *ephebi* (citizens between the ages of 18 and 20). In chapters 43-49 the functions of the Council (βουλή) and of the officials who act in concert with it are described. 50-60 deal with the officials who are appointed by lot, of whom the most important are the nine Archons, to whose functions five chapters (55-59) are devoted. The military officers, who come under the head of elective officials, form the subject of c. 61. With c. 63 begins the section on the Law-courts, which occupied the remainder of the *Constitution*. This portion, with the exception of c. 63, is fragmentary in character, owing to the mutilated condition of the fourth roll of the papyrus on which it was written. It will thus be seen that the subjects which receive fullest treatment in Part II. are the Council, the Archons and the Law-courts. The Ecclesia, on the other hand, is dealt with very briefly, in connexion with the *prytaneis* and *proedri* (cc. 43, 44).

Sources.—The labours of several workers in this field, notably Bruno Keil and Wilamowitz, have rendered it comparatively easy to form a general estimate of Aristotle's indebtedness to previous writers, although problems of great difficulty are encountered as soon as it is attempted to determine the precise sources from which the historical part of the work is derived. Among these sources are unquestionably Herodotus (for the tyranny of Peisistratus, and for the struggle between Cleisthenes and Isagoras), Thucydides (for the episode of Harmodius and Aristogeiton, and for the Four Hundred), Xenophon (for the Thirty), and the poems of Solon. There is now among critics a general consensus in favour of the view that the most important of his sources was the *Atthis* of Androtion, a work published in all probability only a few years earlier than the *Constitution*; in any case, after the year 346. From it are derived not only the passages which are annalistic in character and read like excerpts from a chronicle (e.g. c. 13. 1, 2; c. 22; c. 26. 2, 3), but also most of the matter common to the *Constitution* and to Plutarch's *Solon*. The coincidences with Plutarch, which are often verbal, and extend to about 50 lines out of 170 in cc. 5-11 of the *Constitution*, can best be explained on the hypothesis that Hermippus, the writer followed by Plutarch, used the same source as Aristotle, viz. the *Atthis* of Androtion. Androtion is probably closely followed in the account of the pre-Draconian constitution, and to him appear to

be due the explanation of local names (e.g. χωρίον ἀτελές), or proverbial expressions (e.g. τὸ μὴ φυλοκρινεῖν), as well as the account of "Strategems" such as that of Themistocles against the Areopagus (c. 25) or that employed by Peisistratus in order to disarm the people (c. 15. 4). Whether the anecdotes, which are a conspicuous feature in the *Constitution*, should be referred to the same source is more open to doubt. It is also generally agreed that among the sources was a work, written towards the end of the 5th century B.C., by an author of oligarchical sympathies, with the object of defaming the character and policy of the heroes of the democracy. This source can be traced in passages such as c. 6. 2 (Solon turning the Seisachtheia to the profit of himself and his friends), 9. 2 (obscurity of Solon's laws intentional, cf. c. 35. 2), 27. 4 (Pericles' motive for the introduction of the dicasts' pay). But while the object (οἱ βουλόμενοι βλασφημεῖν, c. 6) and the date of this oligarchical pamphlet (for the date cf. Plutarch's *Solon*, c. 15 οἱ περὶ Κόνωνα καὶ Κλεινίαν καὶ Ἱππόνικον, which points to a time when Conon, Alcibiades and Callias were prominent in public life) are fairly certain, the authorship is quite uncertain, as is also its relationship to another source of importance, viz. that from which are derived the accounts of the Four Hundred and the Thirty. The view taken of the character and course of these revolutions betrays a strong bias in favour of Theramenes, whose ideal is alleged to have been the πάτριος πολιτεία. It has been maintained, on the one hand, that this last source (the authority followed in the accounts of the Four Hundred and the Thirty) is identical with the oligarchical pamphlet, and, on the other, that it is none other than the *Atthis* of Androtion. The former hypothesis is improbable. In favour of the latter two arguments may be adduced. In the first place, Androtion's father, Andron, was one of the Four Hundred, and took Theramenes' side. Secondly, the precise marks of time, which are characteristic of the *Atthis*, are conspicuous in these chapters. In view, however, of the fact that Androtion in his political career showed himself not only a democrat, but a democrat of the extreme school, the hypothesis must be pronounced untenable.

Value.—It is by no means easy to convey a just impression of the value of Aristotle's work as an authority for the constitutional history of Athens. In all that relates to the practice of his own day Aristotle's authority is final. There can be no question, therefore, as to the importance, or the trustworthy character, of the Second Part. But even here a caution is necessary. It must be remembered that its authority is final for the 4th century only, and that we are not justified in arguing from the practice

of the 4th century to that of the 5th, unless corroborative evidence is available. In the First Part, however, where he is treating of the institutions and practice of a past age, Aristotle's authority is very far from being final. An analysis of this part of the work discloses his dependence, in a remarkable degree, upon his sources. Occasionally he compares, criticizes or combines; as a rule he adheres closely to the writer whom he is using. There is no evidence, either of independent inquiry, or of the utilization of other sources than literary ones. Where "original documents" are quoted, or referred to, as e.g. in the history of the Four Hundred, or of the Thirty, it is probable that he derived them from a previous writer. For the authority of Aristotle we must substitute, therefore, the authority of his sources; i.e. the value of any particular statement will vary with the character of the source from which it comes. For the history of the 5th century the passages which come from Androtion's *Atthis* carry with them a high degree of authority. It by no means follows, however, that a statement relating to earlier times is to be accepted simply because it is derived from the same source. And in passages which are derived from other sources than the *Atthis* a much lower degree of authority can be claimed, even for statements relating to the 5th century. The supremacy of the Areopagus after the Persian Wars, the policy attributed to Aristides (c. 24), and the association of Themistocles with Ephialtes, are cases in point. Nor must the reader expect to find in the *Constitution* a great work, in any sense of the term. The style, it is true, is simple and clear, and the writer's criticisms are sensible. But the reader will look in vain for evidence of the philosophic insight which makes the *Politics*, even at the present day, the best text-book of political philosophy. It is perhaps hardly too much to say that there is not a single great idea in the whole work. He will look in vain, too, for any consistent view of the history of the constitution as a whole, or for any adequate account of its development. He will find occasional misunderstandings of measures, and confusions of thought. There are appreciations which it is difficult to accept, and inaccuracies which it is difficult to pardon. There are contradictions which the author has overlooked, and there are omissions which are unaccountable. Yet, in spite of such defects, the importance of the *Constitution* can hardly be exaggerated. Its recovery has rendered obsolete any history of the Athenian constitution that was written before the year 1891. Before this date our knowledge was largely derived from the statements of scholiasts and lexicographers which had not seldom been misunderstood. The recovery of the *Constitution* puts us for the first time in possession of the evidence. To appreciate the difference that has been made by its recovery, it is only necessary to compare what we now know of the reforms of

Cleisthenes with what we formerly knew. It is much of it evidence that needs a careful process of weighing and sifting before it can be safely used; but it is, as a rule, the best, or the only evidence. The First Part may be less trustworthy than the Second; it is not less indispensable to the student of constitutional history.

Bibliography.—A conspectus of the literature of the *Constitution* complete down to the end of 1892 is given in Sandys p. lxvii., and, though less complete, down to the beginning of 1895 in Busolt, *Griechische Geschichte*, 2nd ed. vol. ii. p. 15. In the present article only the most important editions, works or articles are mentioned.

Editions of the text: *Editio princeps*, ed. by F. G. Kenyon, 30th January 1891, with commentary. Autotype facsimile of the papyrus (1891). *Aristotelis* πολιτεία Ἀθηναίων, ed. G. Kaibel et U. von Wilamowitz-Moellendorff (Berlin, Weidmann, 1891). *Aristotelis qui fertur* Ἀθηναίων πολιτεία recensuerunt H. van Herwerden et J. van Leeuwen (Leiden, 1891). Teubner text, ed. by F. Blass (Leipzig, 1892). Edition of the text without commentary by Kenyon.

Most of these have passed through several editions. The fullest commentary is that contained in the edition of the text by J. E. Sandys (London, 1893). The best translations are those of Kenyon, in English, and of Kaibel and Kiessling, in German.

Works dealing with the subject: Bruno Keil, *Die Solonische Verfassung nach Aristoteles* (Berlin, 1892); G. Gilbert, *Constitutional Antiquities of Sparta and Athens* (Eng. trans., 1895); U. von Wilamowitz-Moellendorff, *Aristoteles und Athen* (2 vols., Berlin, 1893), a work of great importance, in spite of many unsound conclusions; E. Meyer, *Forschungen*, vol. ii. pp. 406 ff. (the section dealing with the Four Hundred is especially valuable). Articles: R. W. Macan, *Journal of Hellenic Studies* (April 1891); R. Nissen, *Rheinisches Museum* (1892), p. 161; G. Busolt, *Hermes* (1898), pp. 71 ff.; O. Seeck, "Quellenstudien zu des Aristoteles' Verfassungsgeschichte Athens," in Lehmann's *Beiträge zur alten Geschichte*, vol. iv. pp. 164 and 270.

(E. M. W.)

CONSUETUDINARY (Med. Lat. *consuetudinarius*, from *consuetudo*, custom), customary, a term used especially of law based on custom as opposed to statutory or written law. As a noun "consuetudinary" (Lat. *consuetudinarius*, sc. *liber*) is the name given to a ritual book containing the forms and ceremonies used in the services of a particular monastery, cathedral or religious order.

CONSUL (in Gr. generally ὕπατος, a shortened form of στρατηγὸς ὕπατος, i.e. *praetor maximus*), the title borne by the two highest of the ordinary magistrates of the whole Roman community during the republic. In the imperial period these magistrates had ceased practically to be the heads of the state, but their technical position remained unaltered. (For the modern commercial office of consul see the separate article below.)

The consulship arose with the fall of the ancient monarchy (see further ROME: *History*, II. "The Republic"). The Roman reverence for the abstract conception of the magistracy, as expressed in the imperium and the auspicia, led to the preservation of the regal power weakened only by external limitations. The two new officials who replaced the king bore the titles of leaders (*praetores*) and of judges (*judices*; cf. Cicero, *De legibus*, iii. 3. 8, "regio imperio duo sunto iique a praeeundo judicando ... praetores judices ... appellamino"). But the new fact of colleagueship caused a third title to prevail, that of *consules* or "partners," a word probably derived from *consalio* on the analogy of *praesul* and *exul* (Mommsen, *Staatsrecht*, ii. p. 77, n. 3). This first example of the collegiate principle assumed the form that soon became familiar in the Roman commonwealth. Each of the pair of magistrates could act up to the full powers of the imperium; but the dissent of his colleague rendered his decision or his action null and void. At the same time the principle of a merely annual tenure of office was insisted on. The two magistrates at the close of their year of office were bound to transmit their power to successors; and these successors whom they nominated were obliged to seek the suffrages of the people. The only body known to us as electing the consuls during the republican period was the *comitia centuriata* (see COMITIA). The

consulate was originally confined to patricians. During the struggle for higher office that was waged between the orders the office was suspended on fifty-one occasions between the years 444 and 367 B.C. and replaced by the military tribunate with consular power, to which plebeians were eligible. The struggle was brought to an end by the Licinio-Sextian laws of 367 B.C., which enacted that one consul must be a plebeian (see PATRICIANS).

Most of the internal history of Rome down to the beginning of the third century B.C. consists in a series of attacks, whether intentional or accidental, on the power of the executive. As the consuls are the sole representatives of higher executive authority in early times, this history is one of a progressive decline in the originally wide and arbitrary powers of the office. Their right of summary criminal jurisdiction was weakened by the successive laws of appeal (*provocatio*); their capacity for interpreting the civil law at their pleasure by the publication of the Twelve Tables and the Forms of Action. The growth of the tribunate of the plebs hampered their activity both as legislators and as judges. They surrendered the duties of registration to the censors in 443 B.C., and the rights of civil jurisdiction and control over the market and police to the praetor and the curule aediles in 367 B.C.

The result of these limitations and of this specialization of functions in the community was to leave the consuls with less specific duties at home than any magistrates in the state. But the absence of specific functions may be of itself a sign of a general duty of supervision. The consuls were in a very real sense the heads of the state. Polybius describes them as controlling the whole administration (Polyb. vi. 12 πασῶν εἰσι κύριοι τῶν δημοσίων πράξεων). This control they exercised in concert with the senate, whose chief servants they were. It was they who were the most regular consultants of this council, who formulated its decrees as edicts, and who brought before the people legislative measures which the senate had approved. It was they also who represented the state to the outer world and introduced foreign envoys to the senate. The symbols of their presidency were manifold. It was marked by the twelve lictors (q.v.), a number permitted to no other ordinary magistrate, by the fact that the first act of newly-admitted consuls was to take the auspices, their second to summon the senate, and by the use of their names for dating the year. The consulate was, indeed, as Cicero expresses it, the culminating point in an official career ("Honorum populi finis est consulatus," Cic. *Pro Planco*, 25. 60).

In the domestic sphere the consuls retained certain powers of jurisdiction. This jurisdiction was either (i.) administrative or (ii.) criminal. (i.) Their administrative jurisdiction was sometimes concerned with financial matters such as pecuniary claims made by the state and individuals against one another. They acted in these matters in the periods during which the censors were not in office. We also find them adjudicating in disputes about property between the cities of Italy, (ii.) Their criminal jurisdiction was of three kinds. In the first place it was their duty, before the development of the standing commissions which originated in the middle of the 2nd century B.C., to set in motion the criminal law against offenders for the cognizance of ordinary, as opposed to political, crimes. The reference of such cases to the assembly of the people was effected through their quaestors (see QUAESTOR). Secondly, when the people and senate, or the senate alone, appointed a special commission (see SENATE), the commissioner named was often a consul. Thirdly, we find the consul conducting a criminal inquiry raised by a point of international law. It is possible that in this case his advising body (*consilium*) was composed of the *fetiales* (see HERALD, ad fin.). (Cicero, *De republica*, iii. 18. 28; Mommsen, *Staatsrecht*, ii. p. 112, n. 3).

During the greater part of the republic the consuls were recognized as the heads of the administration abroad as well as at home. It thus became necessary that departments of administration (*provinciae*) should be determined and assigned. The method of assignment varied. The least usual device was for one consul to take the field at the head of an army, while the other remained at home to transact the civil business of state. More often foreign wars demanded the attention of both consuls. In this case the regular army of four legions was usually divided between them. When it was necessary that both armies should co-operate, the principle of rotation was adopted, each consul having the command for a single day—a practice which may be illustrated by the events preceding the battle of Cannae (Polybius iii. 110; Livy xxii. 41). During the great period of conquest from 264 to 146 B.C. Italy was generally one of the consular "provinces," some foreign country the other; and when at the close of this period Italy was at peace, this distinction approximated to one between civil and military command. The consuls settled their departments amongst themselves by agreement or by lot (*comparatio*, *sortitio*), the power of declaring what should be the consular *provinciae* was usurped by the senate, (see SENATE), and a *lex Sempronia* passed by C. Gracchus, probably in 122 B.C., ordained that the two consular provinces should be declared before the election of the consuls. At this time the consuls entered

office on the 1st of January (a practice which commenced in 153 B.C.), and their military command began on the 1st of March. They could hold this military command until they were superseded in the following March, and thus their tenure of power was practically raised to fourteen months. But meanwhile the home officials invested with the imperium had proved insufficient for the military needs of the empire, and the system of prolonging the command (*prorogatio imperii*) had been growing up (see PROVINCE). The consul whose command had been prolonged now served abroad as proconsul. It is probable that Sulla in his legislation of 81 B.C. did something to stereotype this system. Certainly the government by pro-magistrates becomes the rule after this period (cf. Cicero, *De natura deorum*, ii. 3. 9; *De divinatione*, ii. 36. 76, 77), although there are several instances of consuls assuming the active command of provinces between the years 74 and 55 B.C. (Mommsen, *Rechtsfrage*, p. 30), and Cicero declares that the consul has a right to approach every province ("consules, quibus more majorum concessum est vel omnes adire provincias," Cicero, *Ad Atticum*, viii. 15. 3). Certainly in theory the provinces were still regarded as "consular," not "proconsular," and were technically, although not practically, held from the 1st of March of the consul's tenure of office at Rome (cf. Cicero, *De provinciis consularibus*, 15. 37; Mommsen, *Rechtsfrage*, *passim*). It was not until the lex Pompeia of 52 B.C. (Dio Cassius xl. 56) had established a five years' interval between home and foreign command that the theory of the *prorogatio imperii* vanished and the proconsulate became a separate office.

Since the theory of the persistence of the republican constitution was of the essence of the Principate, the consuls necessarily lost little of their outward position and dignity under the rule of the Caesars. The consulship was the only office in which a citizen, other than a member of the imperial house, might have the princeps as a colleague, and in the interval between the death or deposition of one princeps and the appointment of another the consuls resumed their normal position as the heads of the state (cf. Herodian ii. 12). As the presidents of the senate, who after A.D. 14 elected them to their office, they were the chief personal representatives of those elements of sovereignty that were supposed to attach to that body, and they directed that high criminal jurisdiction which the senate of this period assumed (see SENATE). A restored power of jurisdiction is indeed one of the features of their position during this time, and it is probable that the civil appeals which came to the senate were delegated to the consuls. They also acted for a time as delegates to the princeps in matters of Chancery

jurisdiction such as trusts and guardianship (Mommsen, *Staatsrecht*, ii. p. 103). The consulship was also a preparation for certain high commands, such as the government of certain public and imperial provinces (see PROVINCE) and the praefecture of the city. It was probably due to the fact that the consulship was such a prize, and perhaps also to the expense imposed on the office by its association with the celebration of games (Dio Cassius lvi. 46, lix. 20) that the tenure was progressively shortened. In the early principate the consuls hold office for six months, later for four to two months (Mommsen, *Staatsrecht*, ii. pp. 84-87). The consuls appointed for the 1st of January were called *ordinarii*, the others *suffecti*; and the whole year was dated by the names of the former.

This distinction continued in the Empire that was founded by Diocletian and Constantine. The *ordinarii* were nominated by the emperor, the *suffecti* were nominated by the senate, and their appointment was ratified by the emperor. The consulship was still the greatest dignity which the Empire had to bestow; and the pomp and ceremony of the office increased in proportion to the decline in its actual power. The entry of the consuls on office was celebrated by a great procession, by games given to the people, by a distribution of gifts, such as the ivory diptychs, a long series of which has been preserved. But the senate, over which they presided until the time of Justinian, was little more than the municipal council of the city of Rome; and the justice which they meted out had dwindled down to the formal and uncontested acts of manumission and the granting of guardians. Sometimes there was a consul of the West at Rome and a consul of the East at Constantinople; at other times both consuls might be found in either capital. The last consul born in a private station was Basilius in the East in A.D. 541. But the emperors continued to bear the title for some time longer.

AUTHORITIES.—Mommsen, *Römisches Staatsrecht*, ii. pp. 74-140 (3rd ed., Leipzig, 1887); Herzog, *Geschichte und System der römischen Staatsverfassung*, i. p. 688 foll., 827 foll. (Leipzig, 1884, &c.), Lange, *Römische Alterthümer*, i. p. 524 foll. (Berlin, 1856, &c.); Schiller, *Staats- und Rechtsaltertümer*, p. 53 foll. (Munich, 1893, *Handbuch der klassischen Altertums-Wissenschaft*, von Dr Iwan von Müller); Daremberg-Saglio, *Dictionnaire des antiquités grecques et romaines*, i. 1455 foll. (1875, &c.); De Ruggiero, *Dizionario epigrafico di antichità Romane*, ii. 679 foll., 868 foll. (Rome, 1886, &c.); Pauly-Wissowa, *Realencyclopädie*, iv. 1112 foll. (new edition, Stuttgart, 1893, &c.).

For the consular diptychs, cf. besides Daremberg-Saglio, *l.c.*, Gori, *Thesaurus veterum diptychorum* (Florence, 1759), and Labarte, *Histoire des arts industriels au moyen âge*, i. p. 10 foll., 190 foll. (1st ed., Paris, 1864). (A. H. J. G.)

CONSUL, a public officer authorized by the state whose commission he bears to manage the commercial affairs of its subjects in a foreign country, and formally permitted by the government of the country wherein he resides to perform the duties which are specified in his commission, or *lettre de provision*. (For the ancient magisterial office of consul see separate article above.)

A consul, as such, is not invested with any diplomatic character, and he cannot enter on his official duties until a rescript, termed an *exequatur* (sometimes a mere countersign endorsed on the commission), has been delivered to him by the authorities of the state to which his nomination has been communicated by his own government. This *exequatur*, called in Turkey a *barat*, may be revoked at any time at the discretion of the government where he resides. The status of consuls commissioned by the Christian powers to reside in Mahommedan countries, China, Korea, Siam, and, until 1899, in Japan, and to exercise judicial functions in civil and criminal matters between their own countrymen and strangers, is exceptional to the common law, and is founded on special conventions or capitulations (q.v.).

The title of consul, in the sense in which it is used in international law, is derived from that of certain magistrates, in the cities of medieval Italy, Provence and Languedoc, charged with the settlement of trade disputes whether by sea or land (*consules mercatorum, consules artis maris*, &c.)[1] With the growth of trade it early became convenient to appoint agents with similar powers in foreign parts, and these often, though not invariably, were styled consuls (*consules in partibus ultramarinis*).[2] The earliest foreign consuls were those established by Genoa, Pisa, Venice and Florence, between 1098 and 1196, in the Levant, at Constantinople, in Palestine, Syria and Egypt. Of these the Pisan agent at Constantinople bore the title of consul, the

Venetian that of baylo (q.v.). In 1251 Louis IX. of France arranged a treaty with the sultan of Egypt under which French consuls were established at Tripoli and Alexandria, and Du Cange cites a charter of James of Aragon, dated 1268, granting to the city of Barcelona the right to elect consuls in *partibus ultramarinis*, &c. The free growth of the system was, however, hampered by commercial and dynastic rivalries. The system of French foreign consulships, for instance, all but died out after the crushing of the independent life of the south and the incorporation of Provence and Languedoc under the French crown; while, with the establishment of Venetian supremacy in the Levant, the *baylo* developed into a diplomatic agent of the first class at the expense of the consuls of rival states. The modern system of consulships actually dates only from the 16th century. Early in this century both England and Scotland had their "conservators" with "jurisdiction to do justice between merchant and merchant beyond the seas"; but France led the way. The alliance between Francis I. and Suleiman the Magnificent gave her special advantages in the Levant, of which she was not slow to take advantage. Her success culminated in the capitulations signed in 1604, under the terms of which her consuls were given precedence over all others and were endowed with diplomatic immunities (e.g. freedom from arrest and from domiciliary visits), while the traders of all other nations were put under the protection of the French flag. It was not till 1675 that, under the first capitulations signed with Turkey, English consuls were established in the Ottoman empire. Ten years earlier, under the commercial treaty between England and Spain, they had been established in Spain.

The frequent wars of the succeeding century hindered the development of the consular system. Thus, though the system of consuls was regularly established in France by the ordinance of 1661, in 1760 France had consuls only in the Levant, Barbary, Italy, Spain and Portugal, while she discouraged the establishment of foreign consuls in her own ports as tending to infringe her own jurisdiction. It was not till the 19th century that the system developed universally. Hitherto consuls had, for the most part, been business men with no special qualification as regards training; but the French system, under which the consular service had been long established as part of the general civil service of the country, a system that had survived the Revolution unchanged, was gradually adopted by other nations; though, as in France, consuls not belonging to the regular service, and having an inferior status, continued to be appointed. In Great Britain the consular service was organized in 1825 (see below); in

France the series of ordinances and laws by which its modern constitution was fixed began in 1833. In Germany progress was hindered by the political conditions of the country under the old Confederation; for the Hanse cities, which practically monopolized the oversea trade, lacked the means to establish a consular system on the French model. The present magnificently organized consular system of Germany is, then, one of the most remarkable outcomes of the establishment of the united empire. It was initiated by an act of the parliament of the North German Confederation (Nov. 8, 1867), subsequently incorporated in the statutes of the Empire, which laid down the principle that the German consulates were to be under the immediate jurisdiction of the president of the Confederation (later the emperor). The functions, duties and privileges of French and German consuls do not differ materially from those of British consuls; but there is a great difference in the organization and *personnel* of the consular service. In France, apart from the *consuls élus* or *consuls marchands*, who are mere consular agents, selected by the government from among the traders of a town where it desires to be represented, and unsalaried, the consular body proper was, by the decrees of July 10, 1880, and April 27, 1883, practically constituted a branch of the diplomatic service. It is recruited from the same sources, and its members are free to exchange into the *corps diplomatique*, or vice versa. Candidates for the diplomatic and consular services have to undergo the same training and pass the same examinations, i.e. in the constitutional, administrative and judicial organization of the various powers, in international law, commercial law and maritime law, in the history of treaties and in commercial and political geography, in political economy, and in the German and English languages. They have to serve three years abroad or attached to some ministerial department before they can enter for the examination which entitles them to an appointment as attaché or as *consul suppléant*. This assimilation of the consular to the diplomatic service remains peculiar to France.[3]

In Germany it was enacted by the law of February 28, 1873, that German consuls must be either trained jurists, or must have passed special examinations. The result of this system has been the establishment throughout the world of an elaborate network of trained commercial experts, directly responsible to the central government, and charged as one of their principal duties with the task of keeping the government informed of all that may be of interest to German traders. These annual consular reports were from the first regularly and promptly published in the *Deutsche Handelsarchiv*, and have contributed much to the wonderful expansion of German

trade. The right to establish consuls is now universally recognized by Christian civilized states. Jurists at one time contended that according to international law a right of "ex-territoriality" attached to consuls, their persons and dwellings being sacred, and themselves amenable to local authority only in cases of strong suspicion on political grounds. It is now admitted that, apart from treaty, custom has established very few consular privileges; that perhaps consuls may be arrested and incarcerated, not merely on criminal charges, but for civil debt; and that, if they engage in trade or become the owners of immovable property, their persons certainly lose protection. This question of arrest has been frequently raised in Europe:—in the case of Barbuit, a tallow-chandler, who from 1717 to 1735 acted as Prussian consul in London, and to whom the exemption conferred by statute on ambassadors was held not to apply; in the case of Cretico, the Turkish consul in London in 1808; in the case of Begley, the United States consul at Genoa, arrested in Paris in 1840; and in the case of De la Fuente Hermosa, Uruguayan consul, whom the *Cour Royale* of Paris in 1842 held liable to arrest for debt. In the same way consuls are often exempt from all kinds of rates and taxes, and always from personal taxes. They are exempt from billeting and military service, but are not entitled (except in the Levant, where also freedom from arrest and trial is the rule) to have private chapels in their houses. The right of consuls to exhibit their national arms and flag over the door of the bureau is not disputed.

Until the year 1825 British consuls were usually merchants engaged in trade in the foreign countries in which they acted as consuls, and their remuneration consisted entirely of fees. An act of that year, however, organized the consular service as a branch of the civil service, with payment by a fixed salary instead of by fees; consuls were forbidden also to engage in trade, and the management of the service was put under the control of a separate department of the foreign office, created for the purpose. In 1832 the restriction as to engaging in trade was withdrawn, except as regards salaried members of the British consular service.

The duty of consuls, under the "General Instructions to British Consuls," is to advise His Majesty's trading subjects, to quiet their differences, and to conciliate as much as possible the subjects of the two countries. Treaty rights he is to support in a mild and moderate spirit; and he is to check as far as possible evasions by British traders of the local revenue laws. Besides assisting British subjects who are tried for offences in the local courts, and ascertaining the humanity of their treatment after sentence, he has to consider whether home or foreign law is more appropriate to the

case, having regard to the convenience of witnesses and the time required for decision; and, where local courts have wrongfully interfered, he puts the home government in motion through the consul-general or ambassador. He sends in reports on the labour, manufacture, trade, commercial legislation and finance, technical education, exhibitions and conferences of the country or district in which he resides, and, generally, furnishes information on any subject which may be desired of him. He acts as a notary public; he draws up marine and commercial protests, attests documents brought to him, and, if necessary, draws up wills, powers of attorney, or conveyances. He celebrates marriages in accordance with the provisions of the Foreign Marriage Act 1892, and, where the ministrations of a clergyman cannot be obtained, reads the burial service. At a seaport he has certain duties to perform in connexion with the navy. In the absence of any of His Majesty's ships he is senior naval officer; he looks after men left behind as stragglers, or in hospital or prison, and sends them on in due course to the nearest ship. He is also empowered by statute to advance for the erection or maintenance of Anglican churches, hospitals, and places of interment sums equal to the amount subscribed for the purpose by the resident British subjects.

As the powers and duties of consuls vary with the particular commercial interests they have to protect, and the civilization of the state in whose territory they reside, instead of abstract definition, we summarize the provisions on this subject of the British Merchant Shipping Acts.[4] Consuls are bound to send to the Board of Trade such reports or returns on any matter relating to British merchant shipping or seamen as they may think necessary. Where a consul suspects that the shipping or navigation laws are being evaded, he may require the owner or master to produce the log-book or other ship documents (such as the agreement with the seamen, the account of the crew, the certificate of registration); he may muster the crew, and order explanations with regard to the documents. Where an offence has been committed on the high seas, or aboard ashore, by British seamen or apprentices, the consul makes inquiry on oath, and may send home the offender and witnesses by a British ship, particulars for the Board of Trade being endorsed on the agreement for conveyance. He is also empowered to detain a foreign ship the master or seamen of which appear to him through their misconduct or want of skill to have caused injury to a British vessel, until the necessary application for satisfaction or security be made to the local authorities. Every British mercantile ship, not carrying passengers, on entering a port gives into the custody of the consul to be endorsed by him the seamen's agreement, the

certificate of registry, and the official log-book; a failure to do this is reported to the registrar-general of seamen. The following five provisions are also made for the protection of seamen. If a British master engage seamen at a foreign port, the engagement is sanctioned by the consul, acting as a superintendent of Mercantile Marine Offices. The consul collects the property (including arrears of wages) of British seamen or apprentices dying abroad, and remits to H.M. paymaster-general. He also provides for the subsistence of seamen who are shipwrecked, discharged, or left behind, even if their service was with foreign merchants; they are generally sent home in the first British ship that happens to be in want of a complement, and the expenses thus incurred form a charge on the parliamentary fund for the relief of distressed seamen, the consul receiving a commission of 2½% on the amount disbursed. Complaints by crews as to the quality and quantity of the provisions on board are investigated by the consul, who enters a statement in the log-book and reports to the Board of Trade. Money disbursed by consuls on account of the illness or injury of seamen is generally recoverable from the owner. With regard to passenger vessels, the master is bound to give the consul facilities for inspection and for communication with passengers, and to exhibit his "master's list," or list of passengers, so that the consul may transmit to the registrar-general, for insertion in the Marine Register Book, a report of the passengers dying and children born during the voyage. The consul may even defray the expenses of maintaining, and forwarding to their destination, passengers taken off or picked up from wrecked or injured vessels, if the master does not undertake to proceed in six weeks; these expenses becoming, in terms of the Passenger Acts 1855 and 1863, a debt due to His Majesty from the owner or charterer, where a salvor is justified in detaining a British vessel, the master may obtain leave to depart by going with the salvor before the consul, who, after hearing evidence as to the service rendered and the proportion of ship's value and freight claimed, fixes the amount for which the master is to give bond and security. In the case of a foreign wreck the consul is held to be the agent of the foreign owner. Much of the notarial business which is imposed on consuls, partly by statute and partly by the request of private parties, consists in taking the declarations as to registry, transfers, &c., under the Mercantile Shipping Acts. Consuls in the Ottoman empire, China, Siam and Korea have extensive judicial and executive powers.

Since the incorporation of the British consular service in the civil service there have been several proposals to "reform" the system with the view of increasing its

usefulness, more particularly from the point of view of providing assistance to British trade abroad (see *Reports of Special Committees of the House of Commons on the Consular Service*, 1858, 1872, 1903). It has been frequently urged that British consuls in their commercial knowledge and intercourse with foreign merchants compare unfavourably, for example, with the consuls of the United States. It must be remembered, however, that there are points of striking dissimilarity between the duties of the consuls of these two countries. The American consul is necessarily brought much into touch with the trade and commerce of the country to which he is assigned through the system of consular invoices (see AD VALOREM); in his ordinary reports he is not confined to one stereotyped form, and when preparing special reports (a valuable feature of the United States consular service) he is liberally treated as regards any expense to which he has been put in obtaining information. He is practically free from the multifarious duties which the English consul has to discharge in connexion with the mercantile marine, nor has he to perform marriage ceremonies; and financially he is much better off, being allowed to retain as personal all fees obtained from his notarial duties. The Committee of 1903 was appointed to inquire, *inter alia*, whether the limits of age—25 to 50—for candidates should be altered, and whether service as a vice-consul for a certain period should be required to qualify for promotion to the rank of consul; whether means could not be adopted to give consular officers opportunities of increasing their practical knowledge of commercial matters and to bring them more into personal contact with the commercial community. The suggestions of the committee as the result of its inquiries were adopted in principle by the Foreign Office. The consular service is now grouped into three main divisions: (1) the general service; (2) Levant and Persia; and (3) China, Japan, Korea and Siam. The general consular service is graded into three divisions: first grade, consuls-general, salary £1000 with local allowances; second grade, consuls-general and consuls, salary £800 and local allowances; third grade, consuls, salary £600, with local allowances. Vice-consuls have an annual salary of £350, rising by annual increments of £15 to £450. In the general consular service appointments are sometimes made to the higher offices from the ranks, but more usually from a select list of nominees, who must pass a qualifying examination. A proportion of the vacancies are reserved for competition amongst candidates who have had actual commercial experience. Divisions 2 and 3 are recruited by open competition. There were at one time a small number of commercial agents whose business consisted in watching and reporting on the commerce, industries and products of special districts, and in answering inquiries on

commercial subjects. Their duties were subsequently transferred to the consular staff, and a new class of officers, consular attachés, created. The consular attachés divide their time between special investigations abroad, and visits to manufacturing districts in the United Kingdom. The headquarters of the commercial attachés in Europe, except those at Paris and Constantinople, were transferred to London, without defined districts, in 1907 (see *Report on the System of British Commercial Attachés and Agents*, 1908, Cd. 3610). "Pro-consuls" are frequently appointed for the purpose of administering oaths, taking affidavits or affirmations, and performing notarial acts under the Commissioners for Oaths Acts 1889.

The position of the United States consuls is minutely described in the Regulations, Washington, 1896. Under various treaties and conventions they enjoy large privileges and jurisdiction. By the treaty of 1816 with Sweden the United States government agreed that the consuls of the two states respectively should be sole judges in disputes between captains and crews of vessels. (Up to 1906 there were eighteen treaties containing this clause.) By convention with France in 1853 they likewise agreed that the consuls of both countries should be permitted to hold real estate, and to have the "police interne des navires à commerce." In Borneo, China, Korea, Morocco, Persia, Siam, Tripoli and Turkey an extensive jurisdiction, civil and criminal, is exercised by treaty stipulation in cases where United States subjects are interested. Exemption from liability to appear as a witness is often stipulated. The question was raised in France in 1843 by the case of the Spanish consul Soller at Aix, and in America in 1854 by the case of Dillon, the French consul at San Francisco, who, on being arrested by Judge Hoffmann for declining to give evidence in a criminal suit, pulled down his consular flag. So, also, inviolability of national archives is often stipulated. To the consuls of other nations the United States government have always accorded the privileges of arresting deserters, and of being themselves amenable only to the Federal and not to the States courts. They also recognize foreign consuls as representative suitors for absent foreigners.

The United States commercial agents are appointed by the president, and usually receive an *exequatur*. They form a class by themselves, and are distinct from the consular agents, who are simply deputy consuls in districts where there is no principal consul.

By a law of April 1906 the U.S. consular service was reorganized and graded, the office of consul-general being divided into seven classes, and that of consul into nine classes; and on June 27 an executive order was issued by President Roosevelt governing appointments and promotions.

See A. de Miltitz, *Manuel des consuls* (London and Berlin, 1837-1843); Baron Ferdinand de Cussy, *Dictionnaire du diplomate et du consul* (Leipzig, 1846), and *Réglements consulaires des principaux états maritimes de l`Europe et de l`Amérique* (ib., 1851); Tuson, *British Consul's Manual* (London, 1856); De Clercq, *Guide pratique des consulats* (1st ed., 1858, 5th ed. by de Vallat, Paris, 1898); C. J. Tarring, *British Consular Jurisdiction in the East* (London, 1887); Lippmann, *Die Konsularjurisdiktion im Orient* (Berlin, 1898); Zorn, *Die Konsulargesetzgebung des deutschen Reichs* (2nd ed., Berlin, 1901); v. König, *Handbuch des deutschen Konsularwesens* (6th ed., Berlin, 1902); Martens, *Das deutsche Konsular-und Kolonialrecht* (Leipzig, 1904); Malfatti di Monte Tretto, *Handbuch des österreichischungarischen Konsularwesens* (2 vols., 2nd ed., Vienna, 1904). See also the *Parliamentary Reports* referred to in the text. For British consuls much detailed information, including, e.g., minute directions for the uniforms of the various grades, will be found in the official *Foreign Office List* published annually. As regards American consuls, see C. L. Jones, *The Consular Service of the U. S. A.* (Philadelphia, 1906); *Publications of Univ. of Pennsylvania*, "Series in Pol. Econ. and Public Law," No. 18; and Fred. Van Dyne, *Our Foreign Service* (Rochester, N.Y., 1909).

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1 The title of consul was borne by the chief municipal officers of several cities of the south of France during the middle ages and up to the Revolution. The name was not due to their being the successors of the chiefs of the Roman *municipia*. They were members of the governing body known as the *consulat*, and in Latin documents are sometimes styled *consiliarii*, i.e. councillors. The *consulat* itself is not traceable beyond the 12th century.

2 Particular quarters of mercantile cities were assigned to foreign traders and were placed under the jurisdiction of their own magistrates, variously styled syndics, provosts (*praepositi*), échevins (*scabini*), &c., who had power to fine or to expel from the quarter. The Hanseatic League (q.v.), particularly, had numerous settlements of this kind, the earliest being the Steelyard at London, established in the 13th century.

3 i.e. as regards the organization of the system. Consuls, or consuls-general, of other countries have sometimes a diplomatic or quasi-diplomatic status. Consuls-general chargés d'affaires, e.g., rank as diplomatic agents. Of these the most notable is the British agent and consul-general in Egypt, whose position is unique. The diplomatic agent of Belgium at Buenos Aires, e.g., is minister-resident and consul-general, and the minister of Ecuador in London is consul-general chargé d'affaires.

4 See also instructions to consuls prepared by the Board of Trade and approved by the secretary of state for foreign affairs.

"CONSULATE OF THE SEA," a celebrated collection of maritime customs and ordinances (see also SEA LAWS) in the Catalan language, published at Barcelona in the latter part of the 15th century. Its proper title is *The Book of the Consulate*, or in Catalan, *Lo Libre de Consolat*, the name being derived from the fact that it embodied the rules of law followed in the maritime cities of the Mediterranean coast by the commercial judges known generally as consuls (q.v.). The earliest extant edition of the work, which was printed at Barcelona in 1494, is without a title-page or frontispiece, but it is described by the above-mentioned title in the epistle dedicatory prefixed to the table of contents. The only known copy of this edition is preserved in the National Library in Paris. The epistle dedicatory states that the work is an amended version of the *Book of the Consulate*, compiled by Francis Celelles with the assistance of numerous shipmasters and merchants well versed in maritime affairs. According to a statement made by Capmany in his *Codigo de los costumbras maritimas de Barcelona*, published at Madrid in 1791, there was extant to his knowledge in the last century a more ancient edition of the *Book of the Consulate*, printed in semi-Gothic characters, which he believed to be of a date prior to 1484. This is the earliest period to which any historical record of the *Book of the Consulate* being in print can be traced back. There are, however, two Catalan MSS. preserved in the National Library in Paris, the earliest of which, being MS. Espagnol 124, contains the two first treatises which are printed in the *Book of the Consulate* of 1494, and which are the most ancient portion of its contents, written in a hand of the 14th century, on paper of that century. The subsequent parts of this MS. are on paper of the 15th century, but there is no document of a date more recent than 1436. The later of the two MSS., being MS. Espagnol 56, is written throughout on paper of the 15th century, and in a hand of that century, and it purports, from a certificate on the face of the last leaf, to have been executed under the superintendence of Peter Thomas, a notary public, and the scribe of the Consulate of the Sea at Barcelona.

The edition of 1494, which is justly regarded as the *editio princeps* of the *Book of the Consulate*, contains, in the first place, a code of procedure issued by the kings of Aragon for the guidance of the courts of the consuls of the sea, in the second place, a collection of ancient customs of the sea, and thirdly, a body of ordinances for the government of cruisers of war. A colophon at the end of these ordinances informs the readers that "the book commonly called the *Book of the Consulate* ends here"; after which there follows a document known by the title of *The Acceptations*, which purports to record that the previous chapters and ordinances had been approved by the Roman people in the 11th century, and by various princes and peoples in the 12th and 13th centuries. Capmany was the first person to question the authenticity of this document in his *Memorias historicas sobre la marina, &c., de Barcelona*, published at Madrid in 1779-1792. Pardessus and other writers on maritime law followed up the inquiry in the 19th century, and have conclusively shown that the document, whatever may have been its origin, has no proper reference to the *Book of the Consulate*, and is, in fact, of no historical value whatsoever. The paging of the edition of 1494 ceases with this document, at the end of which is the printer's colophon, reciting that "the work was completed on the 14th of July 1494, at Barcelona, by Père Posa, priest and printer." The remainder of the volume consists of what may be regarded as an appendix to the original *Book of the Consulate*. This appendix contains various maritime ordinances of the kings of Aragon and of the councillors of the city of Barcelona, ranging over a period from 1340 to 1484. It is printed apparently in the same type with the preceding part of the volume. The original *Book of the Consulate*, coupled with this appendix, constitutes the work which has obtained general circulation in Europe under the title of *The Consulate of the Sea*, and which in the course of the 16th century was translated into the Castilian, the Italian, and the French languages. The Italian translation, printed at Venice in 1549 by Jean Baptista Pedrezano, was the version which obtained the largest circulation in the north of Europe, and led many jurists to suppose the work to have been of Italian origin. In the next following century the work was translated into Dutch by Westerven, and into German by Engelbrecht, and it is also said to have been translated into Latin.

An excellent translation into French of "The Customs of the Sea," which are the most valuable portion of the *Book of the Consulate*, was published by Pardessus in the second volume of his *Collection des lois maritimes* (Paris, 1834), under the title of "La Compilation connue sous le nom de consulat de la mer." See introduction, by Sir

Travers Twiss, to the *Black Book of the Admiralty* (London, 1874), which in the appendix to vol. iii. contains his translation of "The Customs of the Sea," with the Catalan text.

(T. T.)

CONSUMPTION (Lat. *consumere*), literally, the act of consuming or destroying. Thus the word is popularly applied to phthisis, a "wasting away" of the lungs due to tuberculosis (q.v.). In economics the word has a special significance as a technical term. It has been defined as the destruction of utilities, and thus opposed to "production," which is the creation of utilities, a utility in this connexion being anything which satisfies a desire or serves a purpose. Consumption may be either productive or unproductive; productive where it is a means directly or indirectly to the satisfaction of any economic want, unproductive when it is devoted to pleasures or luxuries. Its place in the science of economics, and its close relation with production, are treated of in every text-book, but special reference may be made to W. Roscher, *Nationalökonomie*, 1883, and G. Schönberg, *Handbuch d. polit. Ökonomie*, 1890-1891.

CONSUS, an ancient Italian deity, originally a god of agriculture. The time at which his festival was held (after harvest and seed-sowing), the nature of its ceremonies and amusements, his altar at the end of the Circus Maximus always covered with earth except on such occasions, all point to his connexion with the earth. In accordance with this, the name has been derived from *condere* (= Condius, as the "keeper" of grain or the "hidden" god, whose life-producing influence works in the depths of the earth). Another etymology is from *conserere* ("sow," cf. Ops Consiva

and her festival Opiconsivia). Amongst the ancients (Livy i. 9; Dion. Halic. ii. 31) Census was most commonly identified with Ποσειδῶν Ἵππιος (Neptunus Equester), and in later Latin poets Consus is used for Neptunus, but this idea was due to the horse and chariot races which took place at his festival; otherwise, the two deities have nothing in common. According to another view, he was the god of good counsel, who was said to have "advised" Romulus to carry off the Sabine women (Ovid, *Fasti*, iii. 199) when they visited Rome for the first celebration of his festival (Consualia). In later times, with the introduction of Greek gods into the Roman theological system, Consus, who had never been the object of special reverence, sank to the level of a secondary deity, whose character was rather abstract and intellectual.

His festival was celebrated on the of August and the 15th of December. On the former date, the flamen Quirinalis, assisted by the vestals, offered sacrifice, and the pontifices presided at horse and chariot races in the circus. It was a day of public rejoicing; all kinds of rustic amusements took place, amongst them running on ox-hides rubbed with oil (like the Gr. ἀσκολιασμός). Horses and mules, crowned with garlands, were given rest from work. A special feature of the games in the circus was chariot racing, in which mules, as the oldest draught beasts, took the place of horses. The origin of these games was generally attributed to Romulus; but by some they were considered an imitation of the Arcadian ἱπποκράτεια introduced by Evander. There was a sanctuary of Consus on the Aventine, dedicated by L. Papirius Cursor in 272, in early times wrongly identified with the altar in the circus.

See W. W. Fowler, *The Roman Festivals* (1899); G. Wissowa, *Religion und Kultus der Römer* (1902); Preller-Jordan, *Römische Mythologie* (1881).

CONTANGO, a Stock Exchange term for the rate of interest paid by a "bull" who has bought stock for the rise and does not intend to pay for it when the Settlement arrives. He arranges to carry over or continue his bargain, and does so by entering into a fresh bargain with his seller, or some other party, by which he sells the stock for the Settlement and buys it again for the next, the price at which the bargain is entered

being called the making-up price. The rate that he pays for this accommodation, which amounts to borrowing the money involved until the next Settlement, is called the contango.

CONTARINI, the name of a distinguished Venetian family, who gave to the republic eight doges and many other eminent citizens. The story of their descent from the Roman family of Cotta, appointed prefects of the Reno valley (whence Cotta Reni or Conti del Reno), is probably a legend. One Mario Contarini was among the twelve electors of the doge Paulo Lucio Anafesto in 697. Domenico Contarini, elected doge in 1043, subjugated rebellious Dalmatia and recaptured Grado from the patriarch of Aquileia. He died in 1070. Jacopo was doge from 1275 to 1280. Andrea was elected doge in 1367, and during his reign the war of Chioggia took place (1380); he was the first to melt down his plate and mortgage his property for the benefit of the state. Other Contarini doges were: Francesco (1623-1624), Niccolò (1630-1631), who built the church of the Salute, Carlo (1655-1656), during whose reign the Venetians gained the naval victory of the Dardanelles, Domenico (1659-1675) and Alvise (1676-1684). There were at one time no less than eighteen branches of the family; one of the most important was that of Contarini dallo Zaffo or di Giaffa, who had been invested with the countship of Jaffa in Syria for their services to Caterina Cornaro, queen of Cyprus; another was that of Contarini degli Scrigni (of the coffers), so called on account of their great wealth. Many members of the family distinguished themselves in the service of the republic, in the wars against the Turks, and no less than seven Contarini fought at Lepanto. One Andrea Contarini was beheaded in 1430 for having wounded the doge Francesco Foscari (q.v.) on the nose. Other members of the house were famous as merchants, prelates and men of letters; among these we may mention Cardinal Gasparo Contarini (1483-1542), and Marco Contarini (1631-1689), who was celebrated as a patron of music and collected at his villa of Piazzola a large number of valuable musical MSS., now in the Marciana library at Venice. The family owned many palaces in various parts of Venice, and several streets still bear its name.

See J. Fontana, “Sulla patrizia famiglia Contarini,” in *Il Gondoliere* (1843).

(L. V.*)

CONTAT, LOUISE FRANÇOISE (1760-1813), French actress, made her *début* at the Comédie Française in 1766 as Atalide in *Bajazet*. It was in comedy, however, that she made her first success, as Suzanne in Beaumarchais’s *Mariage de Figaro*; and in several minor character parts, which she raised to the first importance, and as the soubrette in the plays of Molière and Marivaux, she found opportunities exactly fitted to her talents. She retired in 1809 and married de Parny, nephew of the poet. Her sister Marie Émilie Contat (1769-1846), an admirable soubrette, especially as the pert servant drawn by Molière and de Regnard, made her *début* in 1784, and retired in 1815.

CONTE, literally a “story,” derived from the Fr. *conter*, to narrate, through low Lat. and Provençal forms *contare* and *comtar*. This word, although not recognized by the *New English Dictionary* as an English term, is yet so frequently used in English literary criticisms that some definition of it seems to be demanded. A *conte*, in French, differs from a *récit* or a *rapport* in the element of style; it may be described as an anecdote told with deliberate art, and in this introduction of art lies its peculiar literary value. According to Littré, there is no fundamental difference between a *conte* and a *roman*, and all that can be said is that the *conte* is the generic term, covering long stories and short alike, whereas the *roman* (or novel) must extend to a certain length. But if this is the primitive and correct signification of the word, it is certain that modern criticism thinks of a *conte* essentially as a short story, and as a short story exclusively occupied in illustrating one set of ideas or one disposition of character. As

early as the 13th century, the word is used in French literature to describe an anecdote thus briefly and artistically told, in prose or verse. The fairy-tales of Perrault and the apologues of La Fontaine were alike spoken of as *contes*, and stories of peculiar extravagance were known as *contes bleus*, because they were issued to the common public in coarse blue paper covers. The most famous *contes* in the 18th century were those of Voltaire, who has been described as having invented the *conte philosophique*. But those brilliant stories, *Candide*, *Zadig*, *L'Ingénu*, *La Princess de Babylone* and *Le Taureau blanc*, are not, in the modern sense, *contes* at all. The longer of these are *romans*, the shorter *nouvelles*, not one has the anecdotical unity required by a *conte*. The same may be said of those of Marmontel, and of the insipid imitations of Oriental fancy which were so popular at the close of the 18th century. The most perfect recent writer of *contes* is certainly Guy de Maupassant, and his celebrated anecdote called "Boule de suif" may be taken as an absolutely perfect example of this class of literature, the precise limitations of which it is difficult to define.

(E. G.)

CONTÉ, NICOLAS JACQUES (1755-1805), French mechanical genius, chemist and painter, was born at Aunou-sur-Orne, near Sées, on the 4th of August 1755, of a family of poor farm labourers. At the age of fourteen he displayed precocious artistic talent in a series of religious panels, remarkably fine in colour and composition, for the principal hospital of Sées, where he was employed to help the gardener. With the advice of Greuze he took up portrait painting, quickly became the fashion, and laid by in a few years a fair competency. From that time he gave free rein to his passion for the mechanical arts and scientific studies. He attended the lectures of J. A. C. Charles, L. N. Vaquelin and J. B. Leroy, and exhibited before the Academy of Science an hydraulic machine of his own invention of which the model was the subject of a flattering report, and was placed in Charles's collection. The events of the Revolution soon gave him an opportunity for a further display of his inventive faculty. The war with England deprived France of plumbago; he substituted for it an artificial substance obtained from a mixture of graphite and clay, and took out a patent in 1795 for the

form of pencil which still bears his name. At this time he was associated with Monge and Berthollet in experiments in connexion with the inflation of military balloons, was conducting the school for that department of the engineer corps at Meudon, was perfecting the methods of producing hydrogen in quantity, and was appointed (1796) by the Directory to the command of all the aerostatic establishments. He was at the head of the newly created Conservatoire des arts et métiers, and occupied himself with experiments in new compositions of permanent colours, and in 1798 constructed a metal-covered barometer for measuring comparative heights, by observing the weight of mercury issuing from the tube. Summoned by Bonaparte to take part as chief of the aerostatic corps in the expedition to Egypt, he considerably extended his field of activity, and for three years and a half was, to quote Berthollet, “the soul of the colony.” The disaster of Aboukir and the revolt of Cairo had caused the loss of the greater part of the instruments and munitions taken out by the French. Conté, who, as Monge says, “had every science in his head and every art in his hands,” and whom the First Consul described as “good at everything,” seemed to be everywhere at once and triumphed over apparently insurmountable difficulties. He made, in an almost uncivilized country, utensils, tools and machinery of every sort from simple windmills to stamps for minting coin. Thanks to his activity and genius, the expedition was provided with bread, cloth, arms and munitions of war; the engineers with the exact tools of their trade; the surgeons with operating instruments. He made the designs, built the models, organized and supervised the manufacture, and seemed to be able to invent immediately anything required. On his return to France in 1802 he was commissioned by the minister of the interior, Chaptal, to superintend the publication of the great work of the commission on Egypt, and an engraving machine of his construction materially shortened this task, which, however, he did not live to see finished. He died at Paris on the 6th of December 1805. Napoleon had included him in his first promotions to the Legion of Honour. A bronze statue was erected to his memory in 1852 at Sées, by public subscription.

CONTEMPT OF COURT, in English law, any disobedience or disrespect to the authority or privileges of a legislative body, or interference with the administration of a court of justice.

1. *The High Court of Parliament.* Each of the two houses of Parliament has by the law and custom of parliament power to protect its freedom, dignity and authority against insult, disregard or violence by resort to its own process and not to ordinary courts of law and without having its process interfered with by those courts. The nature and limits of this authority to punish for contempt have been the subject of not infrequent conflict with the courts of law, from the time when Lord Chief Justice Holt threatened to commit the speaker for attempting to stop the trial of *Ashby* v. *White* (1701), as a breach of privilege, to the cases of *Burdett* v. *Abbott* (1810), *Stockdale* v. *Hansard* and *Howard* v. *Gosset* (1842, 1843), and *Bradlaugh* v. *Gosset* (1834). It is now the accepted view that the power of either House to punish contempt is exceptional and derived from ancient usage, and does not flow from their being courts of record. Orders for committal by the Commons are effectual only while the House sits; orders by the Lords may be for a time specified, in which event prorogation does not operate as a discharge of the offender. It was at one time considered that the privilege of committing for contempt was inherent in every deliberative body invested with authority by the constitution, and consequently that colonial legislative bodies had by the nature of their functions the power to commit for contempt. But in *Kielley* v. *Carson* (1843; 4 Moore, P.C. 63) it was held that the power belonged to parliament by ancient usage only and not on the theory above stated, and in each colony it is necessary to inquire how far the colonial legislature has acquired, by order in council or charter or from the imperial legislature, power to punish breach of privilege by imprisonment or committal for contempt. This power has in some cases been given directly, in others by authority to make laws and regulations under sanctions like those enforced by the Houses of the imperial parliament. In the case of Nova Scotia the provincial assembly has power to give itself by statute authority to commit for contempt (*Fielding* v. *Thomas*, 1896; L.R.A.C. 600). In *Barton* v. *Taylor* (1886; 11 A.C. 197) the competence of the legislative assembly of New South Wales to make standing orders punishing contempt was recognized to exist under the colonial constitution, but the particular standing orders under consideration are held not to cover the acts which had been punished. (See May, *Parl. Pr.*, 10th ed., 1896; Anson, *Law and Custom of the Constitution*, 3rd ed., 1897.)

2. *Courts of Justice.* The term contempt of court, when used with reference to the courts or persons to whom the exercise of the judicial functions of the crown has been delegated, means insult offered to such court or person by deliberate defiance of its authority, disobedience to its orders, interruption of its proceedings or interference with the due course of justice, or any conduct calculated or tending to bring the authority or administration of the law into disrespect or disregard, or to interfere with or prejudice parties or witnesses during the litigation. The ingenuity of the judges and of those who are concerned to defeat or defy justice have rendered contempt almost Protean in its character. But for practical purposes most, if not all, contempts fall within the classification which follows:—

(a) Disobedience to the judgment or order of a court commanding the doing or abstaining from a particular act, e.g. an order to execute a conveyance of property or an order on a person in a fiduciary capacity to pay into court trust moneys as to which he is an accounting party. This includes disobedience by the members of a local authority to a *mandamus* to do some act which they are by law bound to do; and proceedings for contempt have been taken in the case of guardians of the poor who have refused to enforce the Vaccination Acts, e.g. at Keighley and Leicester, and of town councillors who have refused to comply with an order to take specified measures to drain their borough (e.g. Worcester). This process for compelling obedience is in substance a process of civil execution for the benefit of the injured party rather than a criminal process for punishing the disobedience; and for purposes of appeal orders dealing with these forms of contempt have hitherto been treated as civil proceedings.

(b) Disobedience by inferior judges or magistrates to the lawful order of a superior court. Such disobedience, if amounting to wilful misconduct, would usually give ground for amotion or removal from office, or for prosecution or indictment or information for misconduct (Archbold, *Criminal Pleading*, 147, 23rd ed.).

(c) Disobedience or misconduct by executive officers of the law, e.g. sheriffs and their bailiffs or gaolers. The contempt consists in not complying with the terms of writs or warrants sent for execution. For instance, a judge of assize having ordered the court to be cleared on account of some disturbance, the high sheriff issued a placard protesting against “this unlawful proceeding,” and “prohibiting his officer from aiding and abetting any attempt to bar out the public from free access to the court.” The lord chief justice of England, sitting in the other court, summoned the sheriff before him

and fined him £500 for the contempt, and £500 more for persisting in addressing the grand jury in court, after he had been ordered to desist. A sheriff who fails to attend the assizes is liable to severe fine as being in contempt (Oswald, 51). And in Harvey's case (1884, 26 Ch. D. 644) steps were taken to attach a sheriff who had failed to execute a writ of attachment for contempt of court in the mistaken belief that he was not entitled to break open doors to take the person in contempt. The Sheriffs Act 1887 enumerates many instances in which misconduct is punishable under that act, but reserves to superior courts of record power to deal with such misconduct as a contempt (s. 29).

(d) Misconduct or neglect of duty by subordinate officials of courts of justice, including solicitors. In these cases it is more usual for the superior authorities to remove the offender from office, or for disciplinary proceedings to be instituted by the Law Society. But in the case of an unqualified person assuming to act as a solicitor or in the case of breach of an undertaking given by a solicitor to the court, proceedings for contempt are still taken.

(e) Misconduct by parties, jurors or witnesses. Jurors who fail to attend in obedience to a jury summons and witnesses who fail to attend on subpoena are liable to punishment for contempt, and parties, counsel or solicitors who practise a fraud on the court are similarly liable.

(f) Contempt in *facie curiae*. "Some contempts," says Blackstone, "may arise in the face of the court, as by rude and contumelious behaviour, by obstinacy, perverseness or prevarication, by breach of the peace, or any wilful disturbance whatever"; in other words, direct insult to or interference with a sitting court is treated as contempt of the court. It is immaterial whether the offender is juror, party, witness, counsel, solicitor or a stranger to the case at hearing, and occasionally it is found necessary to punish for contempt persons under trial for felony or misdemeanour if by violent language or conduct they interrupt the proceedings at their trial. Judges have even treated as contempt the continuance outside the court-house after warning of a noise sufficient to disturb the proceedings of the court; and in Victoria Chief Justice Higginbotham committed for contempt a builder who persisted after warning in building operations close to the central criminal court in Melbourne, which interfered with the due conduct of the business of the sittings.

(g) Attempts to prevent or interfere with the due course of justice, whether made by a person interested in a particular case or by an outsider. This branch of contempt takes many forms, such as frauds on the court by justices, solicitors or counsel (e.g. by fraudulently circularizing shareholders of a company against which a winding-up petition had been filed), tampering with witnesses by inducing them through threats or persuasion not to attend or to withhold evidence or to commit perjury, threatening judge or jury or attempting to bribe them and the like; and also by "scandalizing the court itself" by abusing the parties concerned in a pending case, or by creating prejudice against such persons before their cause is heard.

Invectives against judges.

The *locus classicus* on the subject of contempt by attacks on judges is a judgment prepared by Sir Eardley-Wilmot in the case of an application for an attachment against J. Almon in 1765, for publishing a pamphlet libelling the court of king's bench. The judgment was not actually delivered as the case was settled, but has long been accepted as correctly stating the law. Sir Eardley-Wilmot said that the offence of libelling judges in their judicial capacity is the most proper case for an attachment, for the "arraignment of the justice of the judges is arraigning the king's justice; it is an impeachment of his wisdom and goodness in the choice of his judges; and excites in the minds of the people a general dissatisfaction with all judicial determinations, and indisposes their minds to obey them. To be impartial, and *to be universally thought* so, are both absolutely necessary for the giving justice that free, open and uninterrupted current which it has for many ages found all over this kingdom, and which so eminently distinguishes and exalts it above all nations upon the earth." Again, "the constitution has provided very apt and proper remedies for correcting and rectifying the involuntary mistakes of judges, and for punishing and removing them for any perversion of justice. But if their authority is to be trampled on by pamphleteers and news-writers, and the people are to be told that the power given to the judges for their protection is prostituted to their destruction, the court may retain its power some little time, but I am sure it will eventually lose all its authority."

The object of the discipline enforced by the court by proceedings for contempt of court is not now, if it ever was, to vindicate the personal dignity of the judges or to protect them from insult as individuals, but to vindicate the dignity and authority of the court itself and to prevent acts tending to obstruct the due course of justice. The question whether a personal invective against judges should be dealt with *brevi manu*

by the court attacked, or by proceedings at the instance of the attorney-general by information or indictment for a libel on the administration of justice or on the judge attacked, or should be dealt with by a civil action for damages, depends on the nature and occasion of the attack on the judge.

There has at times been a disposition by judges in colonial courts to use the process of the court to punish criticisms on their acts by counsel or parties or even outsiders, which the privy council has been prone to discourage. For instance in a Nova Scotia case a barrister was suspended from practice for writing to the chief justice of the province a letter relating to a case in which the barrister was suitor. The privy council while considering the letter technically a contempt, held the punishment inappropriate. In *Macleod* v. *St Aubyn* (1899, A.C. 549) it was said that proceedings for scandalizing the court itself were obsolete in England. But in 1900 the king's bench division, following the Almon case, summarily punished a scurrilous personal attack on a judge of assize with reference to his remarks in a concluded ease, published immediately after the conclusion of the case (*R.* v. *Gray*, 1900, 2 Q.B. 36). The same measure may be meted out to those who publish invectives against judges or juries with the object of creating suspicion or contempt as to the administration of justice. But the existence of this power does not militate against the right of the press to publish full reports of trials and judgments or to make with fairness, good faith, candour and decency, comments and criticisms on what passed at the trial and on the correctness of the verdict or the judgment. To impute corruption is said to go beyond the limits of fair criticism. Shortt (*Law relating to Works of Literature*) states the law to be that the temperate and respectful discussion of judicial determination is not prohibited, but mere invective and abuse, and still more the imputation of false, corrupt and dishonest motives is punishable. In an information granted in 1788 against the corporation of Yarmouth for having entered upon their books an order "stating that the assembly were sensible that Mr W. (against whom an action had been brought for malicious prosecution, and a verdict for £3000 returned, which the court refused to disturb) was actuated by motives of public justice, of preserving the rights of the corporation to their admiralty jurisdiction, and of supporting the honour and credit of the chief magistrate," Mr Justice Butler said, "The judge and jury who tried the case, confirmed by the court of common pleas, have said that instead of his having been actuated by motives of public justice, or by any motives which should influence the actions of an honest man, he had been actuated by malice. These opinions are not reconcilable; if

the one be right the other must be wrong. It is therefore a direct insinuation that the court had judged wrong in all they have done in this case, and is therefore clearly a libel on the administration of justice."

The exact limits of the power to punish for contempt of court in respect of statements or comments on the action of judges and juries, or with reference to *pending* proceedings, have been the subject of some controversy, owing to the difficulty of reconciling the claims of the press to liberty and of the public to free discussion of the proceedings of courts of justice with the claims of the judges to due respect and of the parties to litigation that their causes should not be prejudiced before trial by outside interference. As the law now stands it is permissible to publish contemporaneous *reports* of the proceedings in cases pending in any court (Law of Libel Amendment Act 1888, s. 3), unless the proceedings have taken place in private (*in camera*), or the court has in the interests of justice prohibited any report until the case is concluded, a course now rarely, if ever, adopted. But it is not permissible to make any comments on a pending case calculated to interfere with the due course of justice in the case, nor to publish statements about the cause or the parties calculated to have that effect. This rule applies even when the case has been tried and the jury has disagreed if a second trial is in prospect. Applications are frequently made to commit proprietors and editors who comment too freely or who undertake the task of trying in their newspapers a pending case. The courts are now slow to move unless satisfied that the statements or comments may seriously affect the course of justice, e.g. by reaching the jurors who have to try the case.

The difference between pending and decided cases has been frequently recognized by the courts. What would be a fair comment in a decided case may tend to influence the mind of the judge or the jury in a case waiting to be heard, and will accordingly be punished as a contempt. In *Tichborne* v. *Mostyn* the publisher of a newspaper was held to have committed a contempt by printing in his paper extracts from affidavits in a pending suit, with comments upon them. In the case of *R.* v. *Castro* it was held that after a true bill has been found, and the indictment removed into the court of queen's bench, and a day fixed for trial, the case was pending; and it was a contempt of court to address public meetings, alleging that the defendant was not guilty, that there was a conspiracy against the defendant, and that he could not have a fair trial; and the court ordered the parties to answer for their contempt. In the case of the Moat Farm murder (1903) the high court punished as contempt a series of articles published in a

newspaper while the preliminary inquiry was proceeding and before the case went to a jury (*R.* v. *Parker*, 1903, 2 K.B. 432). The like course was followed in 1905 in the case of statements made in a Welsh newspaper about a woman awaiting trial for attempted murder (*R.* v. *Davies*, 1906, 1 K.B. 32); and in the case of the *Weekly Dispatch* in 1902 (*R.* v. *Tibbits and Windust*, 1 K.B. 77), two journalists were tried on indictment, and held to have been rightly convicted, for conspiring to prevent the course of justice by publishing matter calculated to interfere with the fair trial of persons who were under accusation.

Courts having jurisdiction.

"In the superior courts the power of committing for contempt is inherent in their constitution, has been coeval with their original institution and has been always exercised" (Oswald, *On Contempt*, 3). The high court in which these courts are merged is the only court which has a general jurisdiction to deal summarily with all forms of contempt. Each division of that court deals with the particular contempts arising with reference to proceedings before the division; but the king's bench division, in the exercise of the supervisory authority inherited from the old court of king's bench as *custos morum*, also from time to time deals with acts constituting interference with justice in other inferior courts whether of record or not. The nature and limits of this jurisdiction after much discussion have been defined by decisions in 1903 and 1905 in attempts to try by newspapers cases under inquiry by justices or awaiting trial at assizes or quarter sessions. The exercise of this authority in the king's bench division, being in a criminal cause or matter, is not the subject of appeal to any higher court.

Inferior courts of record have, as a general rule, power to punish only those contempts which are committed *in facie curiae* or consist in disobedience to the lawful orders or judgments of the court. For instance, a county court may summarily punish persons who insult the judge or any officer of the court or any juror or witness, or wilfully interrupt the proceedings, or misbehave in the court-house (County Court Act 1888, s. 162), and may also attack persons who having means refuse to comply with an order to pay money, or refuse to comply with an order to deliver up a specific chattel or disobey an injunction. A court of quarter sessions has at common law a like power as to contempts *in facie curiae* and is said to have power to punish its officials for contempt in non-attendance or neglect of duty.

Contempt of court is a misdemeanour and is punishable by fine and imprisonment or either at discretion. The offence may be tried summarily, or may be prosecuted on information or on indictment as was done in the case of the *Weekly Dispatch* already mentioned. The prerogative of pardon extends to all contempts of court which are dealt with by a sentence of clearly punitive character; but it is doubtful whether it extends to committals for disobedience to orders made in aid of the execution of a civil judgment.

Punishment.

Contempt is usually dealt with summarily by the court contemned in the case of contempt *in facie curiae*. The offender may be instantly apprehended and without further proof or examination fined or sent to prison. In the case of other contempts the High Court not only can deal with contempts affecting itself, but can also intervene summarily to protect inferior courts from contempts. This jurisdiction was asserted and exercised in the Moat Farm case (1903) and the *South Wales Post* case (1905) already mentioned.

Except in cases of contempt *in facie curiae* evidence on oath as to the alleged contempt must be laid before the court, and application made for the "committal" or "attachment" of the offender. The differences between the two modes are technical rather than substantial.

The procedure for dealing with contempt of court varies somewhat according as the contempt consists in disobeying an order of the High Court made in a civil cause, or consists in interference with the course of justice by persons not present in court nor parties to the cause. In the first class of cases the court proceeds by order of committal or giving leave to issue writ of attachment. In either case the person said to be in contempt must have full notice of the proposed motion and of the grounds on which he is said to be in contempt; and the rules regulating such proceedings must be strictly complied with (*R.* v. *Tuck*, 1906, 2 Ch. 692). In proceedings on the crown side of the king's bench division it is still usual to apply in the first place for a rule nisi for leave to attach the alleged offender who is given an opportunity of explaining, excusing or justifying the incriminated acts. It is essential that before punishment the alleged offender should have had full notice as to the specific offence charged and opportunity of answering to it. The king's bench procedure is that generally used for interference with the due course of criminal justice or disobedience to prerogative writs such as *mandamus*.

An order of committal is an order in execution specifying the nature of the detention to be suffered, or the penalty to be paid. The process of attachment merely brings the accused into court; he is then required to answer on oath interrogatories administered to him, so that the court may be better informed of the circumstances of the contempt. If he can clear himself on oath he is discharged; if he confesses the court will punish him by fine or imprisonment, or both, at its discretion. But in very many cases on proper apology and submission, and undertaking not to repeat the contempt, and payment of costs, the court allows the proceedings to drop without proceeding to fine or imprison.

From time to time proposals have been made to deprive the superior courts of the power to deal summarily with contempts not committed *in facie curiae*, and to require proceedings on other charges for contempt to go before a jury. This distinction has already been made in some British colonies, e.g. British Guiana, by an ordinance of 1900 (No. 31). Recent decisions in England have so fully defined the limits of the offence and declared the practice of the courts that it would probably only result in undue licence of the press if the power now carefully and judicially exercised of dealing summarily with journalistic interference with the ordinary course of justice were taken away and the delay involved in submitting the case to a jury were made inevitable. The courts now only act in clear cases, and in cases of doubt can always send the question to a jury. The experience of other countries makes it undesirable to part with the summary remedy so long as it is in the hands of a trusted judicature.

Scotland.—In Scotland the courts of session and justiciary have, at common law, and exercise the power of punishing contempt committed during a judicial proceeding by censure, fine or imprisonment *proprio motu* without formal proceedings or a summary complaint. The nature of the offence is there in substance the same as in England (see Petrie, 1889: 7 Rettie Justiciary 3; Smith, 1892: 20 Rettie Justiciary 52).

Ireland.—In Ireland the law of contempt is on the same lines as in England, but conflicts have arisen between the bench and popular opinion, due to political and religious differences, which have led to proposals for making juries and not judges arbiters in cases of contempt.

British Dominions beyond Seas.—The courts of most British possessions have acquired and freely exercise the power of the court of king’s bench to deal summarily

with contempt of court; and, as already stated, it is not infrequently the duty of the privy council to restrain too exuberant a vindication of the offended dignity of a colonial court.

(W. F. C.)

CONTI, PRINCES OF. The title of prince of Conti, assumed by a younger branch of the house of Condé, was taken from Conti-sur-Selles, a small town about 20 m. S.W. of Amiens, which came into the Condé family by the marriage of Louis of Bourbon, first prince of Condé, with Eleanor de Roye in 1551.

FRANÇOIS (1558-1614), the third son of this marriage, was given the title of marquis de Conti, and between 1581 and 1597 was elevated to the rank of a prince. Conti, who belonged to the older faith, appears to have taken no part in the wars of religion until 1587, when his distrust of Henry, third duke of Guise, caused him to declare against the League, and to support Henry of Navarre, afterwards King Henry IV. of France. In 1589 after the murder of Henry III., king of France, he was one of the two princes of the blood who signed the declaration recognizing Henry IV. as king, and he continued to support Henry, although on the death of Charles cardinal de Bourbon in 1590 he himself was mentioned as a candidate for the throne. In 1605 Conti, whose first wife Jeanne de Cöeme, heiress of Bonnétable, had died in 1601, married the beautiful and witty Louise Marguerite (1574-1631), daughter of Henry duke of Guise and Catherine of Cleves, whom, but for the influence of his mistress Gabrielle d'Estrées, Henry IV. would have made his queen. Conti died in 1614. His only child Marie having predeceased him in 1610, the title lapsed. His widow followed the fortunes of Marie de' Medici, from whom she received many marks of favour, and was secretly married to François de Bassompierre (q.v.), who joined her in conspiring against Cardinal Richelieu. Upon the exposure of the plot the cardinal exiled her to her estate at Eu, near Amiens, where she died. The princess wrote *Aventures de la cour de Perse*, in which, under the veil of fictitious scenes and names, she tells the history of her own time.

In 1629 the title of prince de Conti was revived in favour of Armand de Bourbon (1629-1666), second son of Henry II. of Bourbon, prince of Condé, and brother of Louis, the great Condé. He was destined for the church and studied theology at the university of Bourges, but although he received several benefices he did not take orders. He played a conspicuous part in the intrigues and fighting of the Fronde, became in 1648 commander-in-chief of the rebel army, and in 1650 was with his brother Condé imprisoned at Vincennes. Released when Mazarin went into exile, he wished to marry Mademoiselle de Chevreuse (1627-1652), daughter of the famous confidante of Anne of Austria, but was prevented by his brother, who was now supreme in the state. He was concerned in the Fronde of 1651, but soon afterwards became reconciled with Mazarin, and in 1654 married the cardinal's niece, Anne Marie Martinozzi (1639-1672), and secured the government of Guienne. He took command of the army which in 1654 invaded Catalonia, where he captured three towns from the Spaniards. He afterwards led the French forces in Italy, but after his defeat before Alessandria in 1657 retired to Languedoc, where he devoted himself to study and mysticism until his death. At Clermont Conti had been a fellow student of Molière's for whom he secured an introduction to the court of Louis XIV., but afterwards, when writing a treatise against the stage entitled *Traité de la comédie et des spectacles selon les traditions de l'Église* (Paris, 1667), he charged the dramatist with keeping a school of atheism. Conti also wrote *Lettres sur la grâce*, and *Du devoir des grands et des devoirs des gouverneurs de province*.

Louis Armand de Bourbon, prince de Conti (1661-1685), eldest son of the preceding, succeeded his father in 1666, and in 1680 married Marie Anne, a daughter of Louis XIV. and Louise de la Vallière. He served with distinction in Flanders in 1683, and against the wish of the king went to Hungary, where he assisted the Imperialists to defeat the Turks at Gran in 1683. After a dissolute life he died at Fontainebleau from smallpox.

François Louis de Bourbon, prince de Conti (1664-1709), younger brother of the preceding, was known until 1685 as prince de la Roche-sur-Yon. Naturally of great ability, he received an excellent education and was distinguished both for the independence of his mind and the popularity of his manners. On this account he was not received with favour by Louis XIV.; so in 1683 he assisted the Imperialists in Hungary, and while there he wrote some letters in which he referred to Louis as *le roi an théâtre*, for which on his return to France he was temporarily banished to Chantilly.

Conti was a favourite of his uncle the great Condé, whose grand-daughter Marie Thérese de Bourbon (1666-1732) he married in 1688. In 1689 he accompanied his intimate friend Marshal Luxembourg to the Netherlands, and shared in the French victories at Fleurus, Steinkirk and Neerwinden. On the death of his cousin, Jean Louis Charles, duc de Longueville (1646-1694), Conti in accordance with his cousin's will, claimed the principality of Neuchâtel against Marie, duchesse de Nemours (1625-1707), a sister of the duke. He failed to obtain military assistance from the Swiss, and by the king's command yielded the disputed territory to Marie, although the courts of law had decided in his favour. In 1697 Louis XIV. offered him the Polish crown, and by means of bribes the abbé de Polignac secured his election. Conti started rather unwillingly for his new kingdom, probably, as St Simon remarks, owing to his affection for Françoise, wife of Philip II., duke of Orleans, and daughter of Louis XIV. and Madame de Montespan. When he reached Danzig and found his rival Augustus II., elector of Saxony, already in possession of the Polish crown, he returned to France, where he was graciously received by Louis, although St Simon says the king was vexed to see him again. But the misfortunes of the French armies during the earlier years of the war of the Spanish Succession compelled Louis to appoint Conti, whose military renown stood very high, to command the troops in Italy. He fell ill before he could take the field, and died on the 9th of February 1709, his death calling forth exceptional signs of mourning from all classes.

Louis Armand de Bourbon, prince de Conti (1606-1727), eldest son of the preceding, was treated with great liberality by Louis XIV., and also by the regent, Philip duke of Orleans. He served under Marshal Villars in the War of the Spanish Succession, but he lacked the soldierly qualities of his father. In 1713 he married Louise Elisabeth (1693-1775), daughter of Louis Henri de Bourbon, prince de Condé, and grand-daughter of Louis XIV. He was a prominent supporter of the financial schemes of John Law, by which he made large sums of money.

Louis François de Bourbon, prince de Conti (1717-1776), only son of the preceding, adopted a military career, and when the war of the Austrian Succession broke out in 1741 accompanied Charles Louis, duc de Belle-Isle, to Bohemia. His services there led to his appointment to command the army in Italy, where he distinguished himself by forcing the pass of Villafranca and winning the battle of Coni in 1744. In 1745 he was sent to check the Imperialists in Germany, and in 1746 was transferred to the Netherlands, where some jealousy between Marshal Saxe and

himself led to his retirement in 1747. In this year a faction among the Polish nobles offered Conti the crown of that country, where owing to the feeble health of King Augustus III. a vacancy was expected. He won the personal support of Louis XV. for his candidature, although the policy of the French ministers was to establish the house of Saxony in Poland, as the dauphiness was a daughter of Augustus. Louis therefore began secret personal relations with his ambassadors in eastern Europe, who were thus receiving contradictory instructions; a policy known later as the *secret du roi*. Although Conti did not secure the Polish throne he remained in the confidence of Louis until 1755, when his influence was destroyed by the intrigues of Madame de Pompadour; so that when the Seven Years' War broke out in 1756 he was refused the command of the army of the Rhine, and began the opposition to the administration which caused Louis to refer to him as "my cousin the advocate." In 1771 he was prominent in opposition to the chancellor Maupeou. He supported the parlements against the ministry, was especially active in his hostility to Turgot, and was suspected of aiding a rising which took place at Dijon in 1775. Conti, who died on the 2nd of August 1776, inherited literary tastes from his father, was a brave and skilful general, and a diligent student of military history. His house, over which the comtesse de Boufflers presided, was the resort of many men of letters, and he was a patron of Jean Jacques Rousseau.

Louis François Joseph, prince de Conti (1734-1814), son of the preceding, possessed considerable talent as a soldier, and distinguished himself during the Seven Years' War. He took the side of Maupeou in the struggle between the chancellor and the parlements, and in 1788 declared that the integrity of the constitution must be maintained. He emigrated owing to the weakness of Louis XVI., but refused to share in the plans for the invasion of France, and returned to his native country in 1790. Arrested by order of the National Convention in 1793, he was acquitted, but was reduced to poverty by the confiscation of his possessions. He afterwards received a pension, but the Directory banished him from France, and as he refused to share in the plots of the royalists he lived at Barcelona till his death in 1814, when the house of Conti became extinct.

See F. de Bassompierre, *Mémoires* (Paris, 1877); G. Tallemant des Reaux, *Historiettes* (Paris, 1854-1860); L. de R. duc de Saint Simon, *Mémoires* (Paris, 1873); C. E. duchesse d'Orleans, *Mémoires* (Paris, 1880); R. L. Marquis d'Argenson, *Journal et mémoires* (Paris, 1859-1865); F. J. de P. cardinal de Bérnis, *Mémoires et lettres*

(Paris, 1878); J. V. A. duc de Broglie, *Le Secret du roi* (Paris, 1878); P. A. Cheruel, *Histoire de la minorité de Louis XIV et du ministère de Mazarin* (Paris, 1879); E. Boutaric, *Correspondence secrète de Louis XV sur la politique étrangère* (Paris, 1866); P. Foncin, *Essai sur le ministère de Turgot* (Paris, 1877); E. Bourgeois *Neuchâtel et la politique prussienne en Franche-Comté* (Paris, 1877).

CONTI, NICOLO DE' (fl. 1419-1444), Venetian explorer and writer, was a merchant of noble family, who left Venice about 1419, on what proved an absence of 25 years. We next find him in Damascus, whence he made his way over the north Arabian desert, the Euphrates, and southern Mesopotamia, to Bagdad. Here he took ship and sailed down the Tigris to Basra and the head of the Persian Gulf; he next descended the gulf to Ormuz, coasted along the Indian Ocean shore of Persia (at one port of which he remained some time, and entered into a business partnership with some Persian merchants), and so reached the gulf and city of Cambay, where he began his Indian life and observations. He next dropped down the west coast of India to Ely, and struck inland to Vijayanagar, the capital of the principal Hindu state of the Deccan, destroyed in 1555. Of this city Conti gives an elaborate description, one of the most interesting portions of his narrative. From Vijayanagar and the Tungabudhra he travelled to Maliapur near Madras, the traditional resting-place of the body of St Thomas, and the holiest shrine of the native Nestorian Christians, then "scattered over all India," the Venetian declares, "as the Jews are among us." The narrative next refers to Ceylon, and gives a very accurate account of the Cingalese cinnamon tree; but, if Conti visited the island at all, it was probably on the return journey. His outward route now took him to Sumatra, where he stayed a year, and of whose cruel, brutal, cannibal natives he gained a pretty full knowledge, as of the camphor, pepper and gold of this "Taprobana." From Sumatra a stormy voyage of sixteen days brought him to Tenasserim, near the head of the Malay Peninsula. We then find him at the mouth of the Ganges, and trace him ascending and descending that river (a journey of several months), visiting Burdwan and Aracan, penetrating into Burma, and navigating the Irawadi to Ava. He appears to have spent some time in Pegu, from which he again

plunged into the Malay Archipelago, and visited Java, his farthest point. Here he remained nine months, and then began his return by way of *Ciampa* (usually Cochin-China in later medieval European literature, but here perhaps some more westerly portion of Indo-China); a month's voyage from Ciampa brought him to *Coloen*, doubtless Kulam or Quilon, in the extreme south-west of India. Thence he continued his homeward route, touching at Cochin, Calicut and Cambay, to Sokotra, which he describes as still mainly inhabited by Nestorian Christians; to the "rich city" of Aden, "remarkable for its buildings"; to *Gidda* or Jidda, the port of Mecca; over the desert to *Carras* or Cairo; and so to Venice, where he arrived in 1444.

As a penance for his (compulsory) renunciation of the Christian faith during his wanderings, Eugenius IV. ordered him to relate his history to Poggio Bracciolini, the papal secretary. The narrative closes with Conti's elaborate replies to Poggio's question on Indian life, social classes, religion, fashions, manners, customs and peculiarities of various kinds. Following a prevalent fashion, the Venetian divides his Indies into three parts, the first extending from Persia to the Indus; the second from the Indus to the Ganges; the third including all beyond the Ganges; this last he considered to excel the others in wealth, culture and magnificence, and to be abreast of Italy in civilization. We may note, moreover, Conti's account of the bamboo in the Ganges valley; of the catching, taming and rearing of elephants in Burma and other regions; of Indian tattooing and the use of leaves for writing; of various Indian fruits, especially the jack and mango; of the polyandry of Malabar; of the cockfighting of Java; of what is apparently the bird of Paradise; of Indian funeral ceremonies, and especially *suttee*; of the self-mutilation and immolation of Indian fanatics; and of Indian magic, navigation ("they are not acquainted with the compass"), justice, &c. Several venerable legends are reproduced; and Conti's name-forms, partly through Poggio's vicious classicism, are often absolutely unrecognizable; but on the whole this is the best account of southern Asia by any European of the 15th century; while the traveller's visit to Sokotra is an almost though not quite unique performance for a Latin Christian of the middle ages.

The original Latin is in Poggio's *De varietate Fortunae*, book iv.; see the edition of the Abbé Oliva (Paris, 1723). The Italian version, printed in Ramusio's *Navigationi et viaggi*, vol. i., is only from a Portuguese translation made in Lisbon. An English translation with short notes was made by J. Winter Jones for the Hakluyt Society in the

vol. entitled *India in the Fifteenth Century* (London, 1857); an introductory account of the traveller and his work by R. H. Major precedes.

(C. R. B.)

CONTINENT (from Lat. *continere*, "to hold together"; hence "connected," "continuous"), a word used in physical geography of the larger continuous masses of land in contrast to the great oceans, and as distinct from the submerged tracts where only the higher parts appear above the sea, and from islands generally.

On looking at a map of the world, continents appear generally as wedge-shaped tracts pointing southward, while the oceans have a polygonal shape. Eurasia is in some sense an exception, but all the southern terminations of the continents advance into the sea in the form of a wedge—South America, South Africa, Arabia, India, Malaysia and Australia connected by a submarine platform with Tasmania. It is difficult not to believe that these remarkable characters have some relation to the structure of the great globe-mass, and according to T. C. Chamberlin and R. D. Salisbury, in their *Geology* (1906), "the true conception is perhaps that the ocean basins and continental platforms are but the surface forms of great segments of the lithosphere, all of which crowd towards the centre, the stronger and heavier—the ocean basins—taking precedence and squeezing the weaker and lighter ones—the continents—between them." "The area of the most depressed, or master segments, is almost exactly twice that of the protruding or squeezed ones. This estimate includes in the latter about 10,000,000 sq. m. now covered with shallow water. The volume of the hydrosphere is a little too great for the true basins, and it runs over, covering the borders of the continents" (see CONTINENTAL SHELF). Several theories have been advanced to account for the roughly triangular shape of the continents, but that presenting the least difficulty is the one expressed above, "since in a spherical surface divided into larger and smaller segments the major part should be polygonal, while the minor residual segments are more likely to be triangular."

As bearing on this geological idea, it is interesting to notice in this connexion that the areas of volcanic activity are mostly where continent and ocean meet; and that around the continents there is an almost continuous “deep” from 100 to 300 m. broad, of which the Challenger Deep (11,400 ft.) and the great Tuscarora Deep are fragments. If on a map of the world a broad inked brush be swept seawards round Africa, passing into the Mediterranean, round North and South America, round India, then continuously south of Java and round Australia south of Tasmania and northward to the tropic, this broad band will represent the encircling ribbon-like “deep,” which gives strength to the suggestion that the continents in their main features are permanent forms and that their structural connexion with the oceans is not temporary and accidental. The great protruding or “squeezed” segments are the Eurasian (with an area roughly of twenty-four, reckoning in millions of square miles), strongly ridged on the south and east, and relatively flat on the north-west; the African (twelve), rather strongly ridged on the east, less abruptly on the west and north; the North American (ten), strongly ridged on the west, more gently on the east, and relatively flat on the north and in the interior; the South American (nine), strongly ridged on the west and somewhat on the north-east and south-east, leaving ten for the smaller blocks. The sum of these will represent one-third of the earth’s surface, while the remaining two-thirds is covered by the ocean. The foundation structure of the continents is everywhere similar. Their resulting rocks and soils are due to differential minor movements in the past, by which deposits of varying character were produced. These movements, taking place periodically and followed by long periods of rest, produce continued stability for the development and migration of forms of life, the grading of rivers, the development of varied characteristic land forms, the migration and settlement of human beings, the facility or difficulty of intelligent intercourse between races and communities, with finally the commercial interchange of those commodities produced by varying climatic conditions upon different parts of the continental surface; in short, for those geographical factors which form the chief product of past and present human history. (See GEOGRAPHY.)

CONTINENTAL SHELF, the term in physical geography for the submerged platform upon which a continent or island stands in relief. If a coin or medal be partly sunk under water the image and superscription will stand above water and represent a continent with adjacent islands; the sunken part just submerged will represent the continental shelf and the edge of the coin the boundary between it and the surrounding deep, called by Professor H. K. H. Wagner the continental slope. If the lithosphere surface be divided into three parts, namely, the continent heights, the ocean depths, and the transitional area separating them, it will be found that this transitional area is almost bisected by the coast-line, that nearly one-half of it (10,000,000 sq. m.) lies under water less than 100 fathoms deep, and the remainder 12,000,000 sq. m. is under 600 ft. in elevation. There are thus two continuous plain systems, one above water and one under water, and the second of these is called the continental shelf. It represents the area which would be added to the land surface if the sea fell 600 ft. This shelf varies in width. Round Africa—except to the south—and off the western coasts of America it scarcely exists. It is wide under the British Islands and extends as a continuous platform under the North Sea, down the English Channel to the south of France; it unites Australia to New Guinea on the north and to Tasmania on the south, connects the Malay Archipelago along the broad shelf east of China with Japan, unites north-western America with Asia, sweeps in a symmetrical curve outwards from north-eastern America towards Greenland, curving downwards outside Newfoundland and holding Hudson Bay in the centre of a shallow dish. In many places it represents the land planed down by wave action to a plain of marine denudation, where the waves have battered down the cliffs and dragged the material under water. If there were no compensating action in the differential movement of land and sea in the transitional area, the whole of the land would be gradually planed down to a submarine platform, and all the globe would be covered with water. There are, however, periodical warpings of this transitional area by which fresh areas of land are raised above sea-level, and fresh continental coast-lines produced, while the sea tends to sink more deeply into the great ocean basins, so that the continents slowly increase in size. “In many cases it is possible that the continental shelf is the end of a low plain submerged by subsidence; in others a low plain may be an upheaved continental shelf, and probably wave action is only one of the factors at work” (H. R. Mill, *Realm of Nature*, 1897).

CONTINUED FRACTIONS. In mathematics, an expression of the form

$$a_1 \pm \cfrac{b_2}{a_2 \pm \cfrac{b_3}{a_3 \pm \cfrac{b_4}{a_4 \pm \cfrac{b_5}{a_5 \pm \ldots}}}}$$

where a_1, a_2, a_3, ... and b_2, b_3, b_4, ... are any quantities whatever, positive or negative, is called a "continued fraction." The quantities a_1 ..., b_2 ... may follow any law whatsoever. If the continued fraction terminates, it is said to be a terminating continued fraction; if the number of the quantities a_1 ..., b_2 ... is infinite it is said to be a *non-terminating* or *infinite* continued fraction. If b_2/a_2, b_3/a_3 ..., the *component fractions*, as they are called, recur, either from the commencement or from some fixed term, the continued fraction is said to be *recurring* or *periodic*. It is obvious that every terminating continued fraction reduces to a commensurable number.

The notation employed by English writers for the general continued fraction is

$$a_1 \pm \frac{b_2}{a_2} \pm \frac{b_3}{a_2} \pm \frac{b_4}{a_2} \pm \ldots$$

Continental writers frequently use the notation

$$a_1 \pm \frac{b_2}{a_2} \pm \frac{b_3}{a_3} \pm \frac{b_4}{a_3} \pm \ldots, \text{ or } a_1 \pm \frac{b_2|}{a_2} \pm \frac{b_3|}{a_3} \pm \frac{b_4|}{a_4} \pm \ldots$$

The terminating continued fractions

$$a_1, \quad a_1 + \frac{b_2}{a_2}, \; a_1 + \frac{b_2}{a_2 + \frac{b_3}{a_3}}, \quad a_1 + \frac{b_2}{a_2 + \frac{b_3}{a_3 + \frac{b_4}{a_4}}}, \ldots$$

reduced to the forms

$$\frac{a_1}{1}, \quad \frac{a_1a_2 + b_2}{a_2}, \quad \frac{a_1a_2a_3 + b_2a_3 + b_2a_1}{a_2a_3 + b_3}, \quad \frac{a_1a_2a_3a_4 + b_2a_3a_4 + b_3a_1a_4 + b_4a_1a_2 + b_2b_4}{a_2a_3a_4 + a_4b_3 + a_2b_4}, \ldots$$

are called the successive convergents to the general continued fraction.

Their numerators are denoted by p_1, p_2, p_3, p_4...; their denominators by q_1, q_2, q_3, q_4....

We have the relations

$$p_n = a_n p_{n-1} + b_n p_{n-2}, \quad q_n = a_n q_{n-1} + b_n q_{n-2}.$$

In the case of the fraction

$$a_1 - \frac{b_2}{a_2} - \frac{b_3}{a_3} - \frac{b_4}{a_4} - \ldots,$$

we have the relations $p_n = a_n p_{n-1} - b_n p_{n-2}$, $q_n = a_n q_{n-1} - b_n q_{n-2}$.

Taking the quantities a_1 ..., b_2 ... to be all positive, a continued fraction of the form

$$a_1 + \frac{b_2}{a_2} + \frac{b_3}{a_3} + \ldots,$$

is called a *continued fraction of the first class*; a continued fraction of the form

$$\frac{b_2}{a_2} - \frac{b_3}{a_3} - \frac{b_4}{a_4} - \ldots$$

is called a *continued fraction of the second class.*

A continued fraction of the form

$$a_1 + \frac{1}{a_2} + \frac{1}{a_3} + \frac{1}{a_4} + \ldots,$$

where a_1, a_2, a_3, a_4 ... are all *positive integers*, is called a *simple continued fraction*. In the case of this fraction a_1, a_2, a_3, a_4 ... are called the successive *partial quotients*. It is evident that, in this case,

$$p_1, p_2, p_3 \ldots, \quad q_1, q_2, q_3 \ldots,$$

are two series of positive integers increasing without limit if the fraction does not terminate.

The general continued fraction

$$a_1 + \frac{b_2}{a_2 +} \frac{b_3}{a_3 +} \frac{b_4}{a_4 +} \ldots$$

is evidently equal, convergent by convergent, to the continued fraction

$$a_1 + \frac{\lambda_2 b_2}{\lambda_2 a_2 +} \frac{\lambda_2 \lambda_3 b_3}{\lambda_3 a_3 +} \frac{\lambda_3 \lambda_4 b_4}{\lambda_4 a_4 +} \ldots,$$

where λ_2, λ_3, λ_4, ... are any quantities whatever, so that by choosing $\lambda_2 b_2 = 1$, $\lambda_2 \lambda_3 b_3 = 1$, &c., it can be reduced to any equivalent continued fraction of the form

$$a_1 + \frac{1}{d_2 +} \frac{1}{d_3 +} \frac{1}{d_4 +} \ldots,$$

Simple Continued Fractions.

1. The simple continued fraction is both the most interesting and important kind of continued fraction.

Any quantity, commensurable or incommensurable, can be expressed uniquely as a simple continued fraction, terminating in the case of a commensurable quantity, non-terminating in the case of an incommensurable quantity. A non-terminating simple continued fraction must be incommensurable.

In the case of a terminating simple continued fraction the number of partial quotients may be odd or even as we please by writing the last partial quotient, a_n as

$$a_n - 1 + \frac{1}{1} .$$

The numerators and denominators of the successive convergents obey the law $p_n q_{n-1} - p_{n-1} q_n = (-1)^n$, from which it follows at once that every convergent is in its lowest terms. The other principal properties of the convergents are:—

The odd convergents form an increasing series of rational fractions continually approaching to the value of the whole continued fraction; the even convergents form a

decreasing series having the same property.

Every even convergent is greater than every odd convergent; every odd convergent is less than, and every even convergent greater than, any following convergent.

Every convergent is nearer to the value of the whole fraction than any preceding convergent.

Every convergent is a nearer approximation to the value of the whole fraction than any fraction whose denominator is less than that of the convergent.

The difference between the continued fraction and the n^{th} convergent is

$$\text{less than } \frac{1}{q_n q_{n+1}}, \text{ and greater than } \frac{a_{n+2}}{q_n q_{n+2}}.$$

These limits may be replaced by the following, which, though not so close, are simpler, viz.

$$\frac{1}{q^2_n} \text{ and } \frac{1}{q_n(q_n + q_{n+1})}.$$

Every simple continued fraction must converge to a definite limit; for its value lies between that of the first and second convergents and, since

$$\frac{p_n}{q_n} \sim \frac{p_{n-1}}{q_{n-1}} = \frac{1}{q_n q_{n-1}}, \quad \text{Lt.} \frac{p_n}{q_n} = \text{Lt.} \frac{p_{n-1}}{q_{n-1}},$$

so that its value cannot oscillate.

The chief practical use of the simple continued fraction is that by means of it we can obtain rational fractions which approximate to any quantity, and we can also estimate the error of our approximation. Thus a continued fraction equivalent to π (the ratio of the circumference to the diameter of a circle) is

$$3 + \frac{1}{7} + \frac{1}{15} + \frac{1}{1} + \frac{1}{292} + \frac{1}{1} + \frac{1}{1} + \cdots$$

of which the successive convergents are

$$\frac{3}{1}, \frac{22}{7}, \frac{333}{106}, \frac{355}{113}, \frac{103993}{33102}, \text{ \&c.,}$$

the fourth of which is accurate to the sixth decimal place, since the error lies between $1/\{q_4q_5\}$ or .0000002673 and $a_6/\{q_4q_6\}$ or .0000002665.

Similarly the continued fraction given by Euler as equivalent to ½(e - 1) (e being the base of Napierian logarithms), viz.

$$\frac{1}{1+}\frac{1}{6+}\frac{1}{10+}\frac{1}{14+}\frac{1}{18+}\ldots,$$

may be used to approximate very rapidly to the value of e.

For the application of continued fractions to the problem "To find the fraction, whose denominator does not exceed a given integer D, which shall most closely approximate (by excess or defect, as may be assigned) to a given number commensurable or incommensurable," the reader is referred to G. Chrystal's *Algebra*, where also may be found details of the application of continued fractions to such interesting and important problems as the recurrence of eclipses and the rectification of the calendar (q.v.).

Lagrange used simple continued fractions to approximate to the solutions of numerical equations; thus, if an equation has a root between two integers a and a + 1, put x = a + 1/y and form the equation in y; if the equation in y has a root between b and b + 1, put y = b + 1/z, and so on. Such a method is, however, too tedious, compared with such a method as Homer's, to be of any practical value.

The solution in integers of the indeterminate equation ax + by = c may be effected by means of continued fractions. If we suppose a/b to be converted into a continued fraction and p/q to be the penultimate convergent, we have aq - bp = +1 or -1, according as the number of convergents is even or odd, which we can take them to be as we please. If we take aq-bp = +1 we have a general solution in integers of ax + by = c, viz. x = cq - bt, y = at - cp; if we take aq - bp = -1, we have x = bt - cq, y = cp - at.

An interesting application of continued fractions to establish a unique correspondence between the elements of an aggregate of m dimensions and an aggregate of n dimensions is given by G. Cantor in vol. 2 of the *Acta Mathematica*.

Applications of simple continued fractions to the theory of numbers, as, for example, to prove the theorem that a divisor of the sum of two squares is itself the sum of two squares, may be found in J. A. Serret's *Cours d'Algèbre Supérieure*.

2. *Recurring Simple Continued Fractions.*—The infinite continued fraction

$$a_1 + \frac{1}{a_2 +} \frac{1}{a_3 +} \ldots + \frac{1}{a_n +} \frac{1}{b_1 +} \frac{1}{b_2 +} \ldots + \frac{1}{b_n +} \frac{1}{b_1 +} \frac{1}{b_2 +} \ldots + \frac{1}{b_n +} \frac{1}{b_1 +} \ldots,$$

where, after the n^{th} partial quotient, the cycle of partial quotients $b_1, b_2, \ldots, b_n$ recur in the same order, is the type of a recurring simple continued fraction.

The value of such a fraction is the positive root of a quadratic equation whose coefficients are real and of which one root is negative. Since the fraction is infinite it cannot be commensurable and therefore its value is a quadratic surd number. Conversely every positive quadratic surd number, when expressed as a simple continued fraction, will give rise to a recurring fraction. Thus

$$2 - \sqrt{3} = \frac{1}{3 +} \frac{1}{1 +} \frac{1}{2 +} \frac{1}{1 +} \frac{1}{2 +} \ldots,$$

$$\sqrt{28} = 5 + \frac{1}{3 +} \frac{1}{2 +} \frac{1}{3 +} \frac{1}{10 +} \frac{1}{3 +} \frac{1}{2 +} \frac{1}{3 +} \frac{1}{10 +} \ldots$$

The second case illustrates a feature of the recurring continued fraction which represents a complete quadratic surd. There is only one non-recurring partial quotient a_1. If $b_1, b_2, \ldots, b_n$ is the cycle of recurring quotients, then $b_n = 2a_1$, $b_1 = b_{n-1}$, $b_2 = b_{n-2}$, $b_3 = b_{n-3}$, &c.

In the case of a recurring continued fraction which represents $\sqrt{N}$, where N is an integer, if n is the number of partial quotients in the recurring cycle, and p_{nr}/q_{nr} the nr^{th} convergent, then $p^2_{nr} - Nq^2_{nr} = (-1)^{nr}$, whence, if n is odd, integral solutions of the indeterminate equation $x^2 - Ny^2 = \pm 1$ (the so-called Pellian equation) can be found. If n is even, solutions of the equation $x^2 - Ny^2 = +1$ can be found.

The theory and development of the simple recurring continued fraction is due to Lagrange. For proofs of the theorems here stated and for applications to the more general indeterminate equation $x^2 - Ny^2 = H$ the reader may consult Chrystal's *Algebra*

or Serret's *Cours d'Algèbre Supérieure*; he may also profitably consult a tract by T. Muir, *The Expression of a Quadratic Surd as a Continued Fraction* (Glasgow, 1874).

The General Continued Fraction.

1. *The Evaluation of Continued Fractions.*—The numerators and denominators of the convergents to the general continued fraction both satisfy the difference equation $u_n = a_n u_{n-1} + b_n u_{n-2}$. When we can solve this equation we have an expression for the n^{th} convergent to the fraction, generally in the form of the quotient of two series, each of *n* terms. As an example, take the fraction (known as Brouncker's fraction, after Lord Brouncker)

$$\frac{1}{1} + \frac{1^2}{2} + \frac{3^2}{2} + \frac{5^2}{2} + \frac{7^2}{2} + \ldots$$

Here we have

$$u_{n+1} = 2u_n + (2n-1)^2 u_{n-1},$$

whence

$$u_{n+1} - (2n+1)u_n = -(2n-1)\{u_n - (2n-1)u_{n-1}\},$$

and we readily find that

$$\frac{p_n}{q_n} = 1 - \frac{1}{3} + \frac{1}{5} - \frac{1}{7} + \ldots \pm \frac{1}{2n+1},$$

whence the value of the fraction taken to infinity is ¼π.

It is always possible to find the value of the n^{th} convergent to a recurring continued fraction. If r be the number of quotients in the recurring cycle, we can by writing down the relations connecting the successive p's and q's obtain a linear relation connecting

$$p_{nr+m}, \quad p_{(n-1)r+m}, \quad p_{(n-2)r+m}$$

in which the coefficients are all constants. Or we may proceed as follows. (We need not consider a fraction with a non-recurring part). Let the fraction be

$$\frac{a_1}{b_1} + \frac{a_2}{b_2} + \ldots + \frac{a_r}{b_r} + \frac{a_1}{b_1} + \ldots$$

Let $u_n \equiv \frac{p_{nr+m}}{q_{nr+m}}$; then $u_n = \frac{a_1}{b_1} + \frac{a_2}{b_2} + \ldots + \frac{a_r}{b_r + u_{n1}}$,

leading to an equation of the form $Au_nu_{n-1} + Bu_n + Cu_{n-1} + D = 0$, where A, B, C, D are independent of n, which is readily solved.

2. *The Convergence of Infinite Continued Fractions.*—We have seen that the simple infinite continued fraction converges. The infinite general continued fraction of the first class cannot diverge for its value lies between that of its first two convergents. It may, however, oscillate. We have the relation $p_nq_{n-1} - p_{n-1}q_n = (-1)^n b_2b_3 \ldots b_n$, from which

$$\frac{p_n}{q_n} - \frac{p_{n-1}}{q_{n-1}} = (-1)^n \frac{b_2b_3 \ldots b_n}{q_nq_{n-1}},$$

and the limit of the right-hand side is not necessarily zero.

The tests for convergency are as follows:

Let the continued fraction of the first class be reduced to the form

$$d_1 + \frac{1}{d_2} + \frac{1}{d_3} + \frac{1}{d_4} + \ldots,$$

then it is convergent if at least one of the series $d_3 + d_5 + d_7 + \ldots$, $d_2 + d_4 + d_6 + \ldots$ diverges, and oscillates if both these series converge.

For the convergence of the continued fraction of the second class there is no complete criterion. The following theorem covers a large number of important cases.

"If in the infinite continued fraction of the second class $a_n \geq b_n + 1$ for all values of n, it converges to a finite limit not greater than unity."

3. *The Incommensurability of Infinite Continued Fractions.*—There is no general test for the incommensurability of the general infinite continued fraction.

Two cases have been given by Legendre as follows:—

If $a_2, a_3, ..., a_n, b_2, b_3, ..., b_n$ are all positive integers, then

I. The infinite continued fraction

$$\frac{b_2}{a_2} + \frac{b_3}{a_3} + ... + \frac{b_n}{a_n} + ...$$

converges to an incommensurable limit if after some finite value of n the condition $a_n \neq b_n$ is always satisfied.

II. The infinite continued fraction

$$\frac{b_2}{a_2} - \frac{b_3}{a_3} - ... - \frac{b_n}{a_n} - ...$$

converges to an incommensurable limit if after some finite value of n the condition $a_n \geq b_n + 1$ is always satisfied, where the sign > need not always occur but must occur *infinitely often*.

Continuants.

The functions p_n and q_n, regarded as functions of $a_1, \ldots, a_n, b_2, \ldots, b_n$ determined by the relations

$$p_n = a_n p_{n-1} + b_n p_{n-2},$$
$$q_n = a_n q_{n-1} + b_n q_{n-2},$$

with the conditions $p_1 = a_1$, $p_0 = 1$; $q_2 = a_2$, $q_1 = 1$, $q_0 = 0$, have been studied under the name of *continuants*. The notation adopted is

$$p_n = K \begin{pmatrix} b_2, \ldots, b_n \\ a_1, \quad a_2, \ldots, a_n \end{pmatrix},$$

and it is evident that we have

$$q_n = K \begin{pmatrix} b_3, \ldots, b_n \\ a_1, \quad a_3, \ldots, a_n \end{pmatrix}.$$

The theory of continuants is due in the first place to Euler. The reader will find the theory completely treated in Chrystal's *Algebra*, where will be found the exhibition of a prime number of the form $4p + 1$ as the actual sum of two squares by means of continuants, a result given by H. J. S. Smith.

The continuant

$$K \begin{pmatrix} b_2, b_3, \ldots, b_n \\ a_1, \quad a_2, a_3, \ldots, a_n \end{pmatrix}$$

is also equal to the determinant

$$\begin{vmatrix} a_1 & b_2 & 0 & 0 & . & . & . & 0 \\ -1 & a_2 & b_3 & 0 & . & . & . & 0 \\ 0 & -1 & a_3 & b_4 & . & . & . & 0 \\ 0 & 0 & -1 & a_4 & b_5 & . & . & - \end{vmatrix}$$

$$\begin{vmatrix} & & & & & -1 & a_{n-1} & b_n \\ & & & & u & 0 & -1 & a_n \\ 0 & 0 & - & - & 0 & & & \end{vmatrix}$$

from which point of view continuants have been treated by W. Spottiswoode, J. J. Sylvester and T. Muir. Most of the theorems concerning continued fractions can be thus proved simply from the properties of determinants (see T. Muir's *Theory of Determinants*, chap. iii.).

Perhaps the earliest appearance in analysis of a continuant in its determinant form occurs in Lagrange's investigation of the vibrations of a stretched string (see Lord Rayleigh, *Theory of Sound*, vol. i. chap. iv.).

The Conversion of Series and Products into Continued Fractions.

1. A continued fraction may always be found whose n^{th} convergent shall be equal to the sum to n terms of a given series or the product to n factors of a given continued product. In fact, a continued fraction

$$\frac{b_1}{a_1} + \frac{b_2}{a_2} + \ldots + \frac{b_n}{a_n} + \ldots$$

can be constructed having for the numerators of its successive convergents any assigned quantities p_1, p_2, p_3, ..., p_n, and for their denominators any assigned quantities q_1, q_2, q_3, ..., q_n ...

The partial fraction b_n/a_n corresponding to the n^{th} convergent can be found from the relations

$$p_n = a_n p_{n-1} + b_n p_{n-2}, \quad q_n = a_n q_{n-1} + b_n q_{n-2} ;$$

and the first two partial quotients are given by

$$b_1 = p_1, \quad a_1 = q_1, \quad b_1a_2 = p_2, \quad a_1a_2 + b_2 = q_2.$$

If we form then the continued fraction in which $p_1, p_2, p_3, \ldots, p_n$ are $u_1, u_1 + u_2, u_1 + u_2 + u_3, \ldots, u_1 + u_2 + \ldots, u_n$, and $q_1, q_2, q_3, \ldots, q_n$ are all unity, we find the series $u_1 + u_2 + \ldots, u_n$ equivalent to the continued fraction

$$\frac{u_1}{1} - \frac{u_2/u_1}{1 + \frac{u_2}{u_1}} - \frac{u_3/u_2}{1 + \frac{u_3}{u_2}} - \ldots - \frac{u_n/u_{n-1}}{1 + \frac{u_n}{u_{n-1}}}$$

which we can transform into

$$\frac{u_1}{1} - \frac{u_2}{u_1 + u_2} - \frac{u_1u_3}{u_2 + u_3} - \frac{u_2u_4}{u_3 + u_4} - \ldots - \frac{u_{n-2}u_n}{u_{n-1} + u_n},$$

a result given by Euler.

2. In this case the sum to n terms of the series is equal to the n^{th} convergent of the fraction. There is, however, a different way in which a Series may be represented by a continued fraction. We may require to represent the infinite convergent power series $a_0 + a_1x + a_2x^2 + \ldots$ by an infinite continued fraction of the form

$$\frac{\beta_0}{1} - \frac{\beta_1x}{1} - \frac{\beta_2x}{1} - \frac{\beta_3x}{1} - \ldots$$

Here the fraction converges to the sum to infinity of the series. Its n^{th} convergent is not equal to the sum to n terms of the series. Expressions for $\beta_0, \beta_1, \beta_2, \ldots$ by means of determinants have been given by T. Muir (*Edinburgh Transactions*, vol. xxvii.).

A method was given by J. H. Lambert for expressing as a continued fraction of the preceding type the quotient of two convergent power series.

It is practically identical with that of finding the greatest common measure of two polynomials. As an instance leading to results of some importance consider the series

$$F(n,x) = 1 + \frac{x}{(\gamma + n)1!} + \frac{x^2}{(\gamma + n)(\gamma + n + 1)2!} + \ldots$$

We have

$$F(n + 1,x) - F(n,x) = -\frac{x}{(\gamma + n)(\gamma + n + 1)2!} F(n + 2,x),$$

whence we obtain

$$\frac{F(1,x)}{F(0,x)} = \frac{1}{1 + \dfrac{x/\gamma(\gamma + 1)}{1 + \dfrac{x/(\gamma + 1)(\gamma + 2)}{1 + \ldots,}}}$$

which may also be written

$$\frac{\gamma}{\gamma + \dfrac{x}{\gamma + 1 + \dfrac{x}{\gamma + 2 + \ldots}}}$$

By putting $\pm x^2/4$ for x in F(0,x) and F(1,x), and putting at the same time $\gamma = 1/2$, we obtain

$$\tan x = \frac{x}{1 - \dfrac{x^2}{3 - \dfrac{x^2}{5 - \dfrac{x^2}{7 - \ldots}}}} \qquad \tanh x = \frac{x}{1 + \dfrac{x^2}{3 + \dfrac{x^2}{5 + \dfrac{x^2}{7 + \ldots}}}}$$

These results were given by Lambert, and used by him to prove that π and π^2 incommensurable, and also any commensurable power of e.

Gauss in his famous memoir on the hypergeometric series

$$F(\alpha, \beta, \gamma, x) = 1 + \frac{\alpha \cdot \beta}{1 \cdot \gamma} x + \frac{\alpha(\alpha + 1)\beta(\beta + 1)}{1 \cdot 2 \cdot \gamma \cdot (\gamma + 1)} x^2 + \ldots$$

gave the expression for $F(\alpha, \beta + 1, \gamma + 1, x) \div F(\alpha, \beta, \gamma, x)$ as a continued fraction, from which if we put $\beta = 0$ and write $\gamma - 1$ for γ, we get the transformation

$$1 + \frac{\alpha}{\gamma}x + \frac{\alpha(\alpha+1)}{\gamma(\gamma+1)}x^2 + \frac{\alpha(\alpha+1)(\alpha+2)}{\gamma(\gamma+1)(\gamma+2)}x^3 + \ldots = \frac{1}{1 -}\ \frac{\beta_1 x}{1}\ -\ \frac{\beta_2 x}{1}\ - \ldots$$

where

$$\beta_1 = \frac{\alpha}{\gamma}, \quad \beta_3 = \frac{(\alpha+1)\gamma}{(\gamma+1)(\gamma+2)}, \ldots, \quad \beta_{2n-1} = \frac{(\alpha+n-1)(\gamma+n-2)}{(\gamma+2n-3)(\gamma+2n-2)},$$
$$\beta_2 = \frac{\gamma - \alpha}{\gamma(\gamma+1)}, \quad \beta_4 = \frac{2(\gamma+1-\alpha)}{(\gamma+2)(\gamma+3)}, \ldots, \quad \beta_{2n} = \frac{n(\gamma+n-1-\alpha)}{(\gamma+2n-2)(\gamma+2n-1)}.$$

From this we may express several of the elementary series as continued fractions; thus taking $\alpha = 1$, $\gamma = 2$, and putting x for -x, we have

$$\log(1+x) = \frac{x}{1+}\ \frac{1^2x}{2}\ +\ \frac{1^2x}{3}\ +\ \frac{2^2x}{4}\ +\ \frac{2^2x}{5}\ +\ \frac{3^2x}{6}\ +\ \frac{3^2x}{7}\ + \ldots$$

Taking $\gamma = 1$, writing x/α for x and increasing α indefinitely, we have

$$e^x = \frac{1}{1 -}\ \frac{x}{1} + \frac{x}{2} - \frac{x}{3} + \frac{x}{2} - \frac{x}{5} + \ldots$$

For some recent developments in this direction the reader may consult a paper by L. J. Rogers in the *Proceedings of the London Mathematical Society* (series 2, vol. 4).

Ascending Continued Fractions.

There is another type of continued fraction called the ascending continued fraction, the type so far discussed being called the descending

continued fraction. It is of no interest or importance, though both Lambert and Lagrange devoted some attention to it. The notation for this type of fraction is

$$a_1 + \cfrac{b_2}{a_2 + \cfrac{b_3}{a_3 + \cfrac{b_4}{a_4 + \cfrac{b_5}{a_5 + \cfrac{}{}}}}}$$

It is obviously equal to the series

$$a_1 + \frac{b_2}{a_2} + \frac{b_3}{a_2 a_3} + \frac{b_4}{a_2 a_3 a_4} + \frac{b_5}{a_2 a_3 a_4 a_5} + \ldots$$

Historical Note.

The invention of continued fractions is ascribed generally to Pietro Antonia Cataldi, an Italian mathematician who died in 1626. He used them to represent square roots, but only for particular numerical examples, and appears to have had no theory on the subject. A previous writer, Rafaello Bombelli, had used them in his treatise on Algebra (about 1579), and it is quite possible that Cataldi may have got his ideas from him. His chief advance on Bombelli was in his notation. They next appear to have been used by Daniel Schwenter (1585-1636) in a *Geometrica Practica* published in 1618. He uses them for approximations. The theory, however, starts with the publication in 1655 by Lord Brouncker of the continued fraction

$$\cfrac{1}{1 + \cfrac{1^2}{2 + \cfrac{3^2}{2 + \cfrac{5^2}{2 + \ldots}}}}$$

as an equivalent of $\pi / 4$. This he is supposed to have deduced, no one knows how, from Wallis' formula for $4/\pi$ viz.

$$\frac{3 \cdot 3 \cdot 5 \cdot 5 \cdot 7 \cdot 7 \ldots}{2 \cdot 4 \cdot 4 \cdot 6 \cdot 6 \cdot 8 \ldots}$$

John Wallis, discussing this fraction in his *Arithmetica Infinitorum* (1656), gives many of the elementary properties of the convergents to the general continued fraction, including the rule for their formation. Huygens (*Descriptio automati planetarii*, 1703) uses the simple continued fraction for the purpose of approximation when designing the toothed wheels of his *Planetarium*. Nicol Saunderson (1682-1739), Euler and Lambert helped in developing the theory, and much was done by Lagrange in his additions to the French edition of Euler's *Algebra* (1795). Moritz A. Stern wrote at length on the subject in *Crelle's Journal* (x., 1833; xi., 1834; xviii., 1838). The theory of the convergence of continued fractions is due to Oscar Schlömilch, P. F. Arndt, P. L. Seidel and Stern. O. Stolz, A. Pringsheim and E. B. van Vleck have written on the convergence of infinite continued fractions with complex elements.

REFERENCES.—For the further history of continued fractions we may refer the reader to two papers by Gunther and A. N. Favaro, *Bulletins di bibliographia e di storia delle scienze mathematische e fisicke*, t. vii., and to M. Cantor, *Geschichte der Mathematik*, 2nd Bd. For text-books treating the subject in great detail there are those of G. Chrystal in English; Serret's *Cours d`algèbre supérieure* in French; and in German those of Stern, Schlömilch, Hatterdorff and Stolz. For the application of continued fractions to the theory of irrational numbers there is P. Bachmann's *Vorlesungen über die Natur der Irrationalzahnen* (1892). For the application of continued fractions to the theory of lenses, see R. S. Heath's *Geometrical Optics*, chaps. iv. and v. For an exhaustive summary of all that

has been written on the subject the reader may consult Bd. 1 of the *Encyklopädie der mathematischen Wissenschaften* (Leipzig). (A. E. J.)

CONTOUR, CONTOUR-LINE (a French word meaning generally "outline," from the Med. Lat. *contornare*, to round off), in physical geography a line drawn upon a map through all the points upon the surface represented that are of equal height above sea-level. These points lie, therefore, upon a horizontal plane at a given elevation passing through the land shown on the map, and the contour-line is the intersection of that horizontal plane with the surface of the ground. The contour-line of 0, or *datum level*, is the coastal boundary of any land form. If the sea be imagined as rising 100 ft., a new coast-line, with bays and estuaries indented in the valleys, would appear at the new sea-level. If the sea sank once more to its former level, the 100-ft. contour-line with all its irregularities would be represented by the beach mark made by the sea when 100 ft. higher. If instead of receding the sea rose continuously at the rate of 100 ft. per day, a series of levels 100 ft. above one another would be marked daily upon the land until at last the highest mountain peaks appeared as islands less than 100 ft. high. A record of this series of advances marked upon a flat map of the original country would give a series of concentric contour-lines narrowing towards the mountain-tops, which they would at last completely surround. Contour-lines of this character are marked upon most modern maps of small areas and upon all government survey and military maps at varying intervals according to the scale of the map.

CONTRABAND (Fr. *contrebande*, from *contra*, against, and *bannum*, Low Lat. for "proclamation"), a term given generally to illegal traffic; and particularly, as "contraband of war," to goods, &c., which subjects of neutral states are forbidden by international law to supply to a belligerent.

According to current practice contraband of war is of two kinds: (1) absolute or unconditional contraband, i.e. materials of direct application in naval or military armaments; and (2) conditional contraband, consisting of articles which are fit for, but not necessarily of direct application to, hostile uses. There is much difference of opinion among international jurists and states, however, as to the specific materials and articles which may rightfully be declared by belligerents to belong to either class. There is also disagreement as to the belligerent right where the immediate destination is a neutral but the ultimate an enemy port.

An attempt was made at the Second Hague Conference to come to an agreement on the chief points of difference. The British delegates were instructed even to abandon the principle of contraband of war altogether, subject only to the exclusion by blockade of neutral trade from enemy ports. In the alternative they were to do their utmost to restrict the definition of contraband within the narrowest possible limits, and to obtain exemption of food-stuffs destined for places other than beleaguered fortresses and of raw materials required for peaceful industry. Though the discussions at the conference did not result in any convention, except on the subject of mails, it was agreed among the leading maritime states that an early attempt should be made to codify the law of naval war generally, in connexion with the establishment of an international prize court (see PRIZE).

Meanwhile, on the subject of mails, important articles were adopted which figure in the "Convention on restrictions in the right of capture" (No. 11 of the series as set out in the General Act, see PEACE CONFERENCE). They are as follows:—

Mails.

ART. I.—The postal correspondence of neutrals or belligerents, whatever its official or private character may be, found on the high seas on board a neutral or enemy ship is inviolable. If the ship is detained, the correspondence is forwarded by the captor with the least possible delay.

The provisions of the preceding paragraph do not apply, in case of violation of blockade, to correspondence destined for, or proceeding from, a blockaded port.

ART. II.—The inviolability of postal correspondence does not exempt a neutral mail ship from the laws and customs of maritime war as to neutral merchant ships in general. The ship, however, may not be searched except when absolutely necessary, and then only with as much consideration and expedition as possible.

As regards food-stuffs Great Britain has long and consistently held that provisions and liquors fit for the consumption of the enemy's naval or military forces are contraband. Her Prize Act, however, provides a palliative, in the case of "naval or victualling stores," for the penalty attaching to absolute contraband, the lords of the admiralty being entitled to exercise a right of pre-emption over such stores, i.e. to purchase them without condemnation in a prize court. In practice, purchases are made at the market value of the goods, with an additional 10% for loss of profit.

Foodstuffs and pre-emption.

On the continent of Europe no such palliative has yet been adopted; but moved by the same desire to distinguish unmistakable from, so to speak,

constructive contraband, and to protect trade against the vexation of uncertainty, many continental jurists have come to argue conditional contraband away altogether. This change of opinion has especially manifested itself in the discussions on the subject in the Institute of International Law, a body composed exclusively of recognized international jurists. The rules this body adopted in 1896, though they do not represent the unanimous feeling of its members, may be taken as the view of a large proportion of them. The majority comprised German, Danish, Italian, Dutch and French specialists. The rules adopted contain a clause, which, after declaring conditional contraband abolished, states that: "Nevertheless the belligerent has, at his option and on condition of paying an equitable indemnity, a right of sequestration or pre-emption as to articles (*objets*) which, on their way to a port of the enemy, may serve equally in war or in peace." This rule, it is seen, is of wider application than the above-mentioned provision of the British Prize Act. To become binding in its existing form, either an alteration of the text of the Declaration of Paris or a modification in the wording of the clause would be necessary, seeing that under the Declaration of Paris "the neutral flag covers enemy goods, except contraband of war." It may be said that, in so far as the continent is concerned, expert opinion is, on the whole, favourable to the recognition of conditional contraband in the form of a right of sequestration or pre-emption and within the limits Great Britain has shown a disposition to set to it as against herself.

Coal.

As regards coal there is no essential difference between the position of coal to feed ships and that of provisions to feed men. Neither is *per se* contraband. At the West African Conference in 1884 the Russian representative protested against its inclusion among contraband articles, but the Russian government included it in their declaration as to contraband on the outbreak of the Russo-Japanese War. In 1898 the British foreign office replied to an inquiry

of the Newport Chamber of Commerce on the position of coal that: "Whether in any particular case coal is or is not contraband of war, is a matter prima facie for the determination of the Prize Court of the captor's nationality, and so long as such decision, when given, does not conflict with well-established principles of international law, H.M.'s government will not be prepared to take exception thereto." The practical applications of the law and usage of contraband in the Russo-Japanese War of 1904-5, however, brought out vividly the need of reform in these "well-established principles."

The Japanese regulations gave rise to no serious difficulties. Those issued by Russia, on the other hand, led to much controversy between the British government and that of Russia, in connexion with the latter's pretension to class coal, rice, provisions, forage, horses and cotton with arms, ammunition, explosives, &c., as absolute contraband. On June 1, 1904, Lord Lansdowne expressed the surprise with which the British government learnt that rice and provisions were to be treated as unconditionally contraband—"a step which they regarded as inconsistent with the law and practice of nations." They furthermore "felt themselves bound to reserve their rights by also protesting against the doctrine that it is for the belligerent to decide what articles are as a matter of course, and without reference to other considerations, to be dealt with as contraband of war, regardless of the well-established rights of neutrals"; nor would the British government consider itself bound to recognize as valid the decision of any prize court which violated those rights. It did not dispute the right of a belligerent to take adequate precautions for the purpose of preventing contraband of war, in the hitherto accepted sense of the words, from reaching the enemy; but it objected to the introduction of a new doctrine under which "the well-understood distinction between conditional and unconditional contraband was altogether ignored, and under which,

Controversy with Russia in Russo-Japanese War.

moreover, on the discovery of articles alleged to be contraband, the ship carrying them was, without trial and in spite of her neutrality, subjected to penalties which are reluctantly enforced even against an enemy's ship." (See section 40 of Russian Instructions on Procedure in Stopping, Examining and Seizing Merchant Vessels, published in *London Gazette* of March 18, 1904.) In particular circumstances provisions might acquire a contraband character, as, for instance, if they should be consigned direct to the army or fleet of a belligerent, or to a port where such fleet might be lying, and if facts should exist raising the presumption that they were about to be employed in victualling the fleet of the enemy. In such cases it was not denied that the other belligerent would be entitled to seize the provisions as contraband of war, on the ground that they would afford material assistance towards the carrying on of warlike operations. But it could not be admitted that if such provisions were consigned to the port of a belligerent (even though it should be a port of naval equipment) they should therefore be necessarily regarded as contraband of war. The test was whether there were circumstances relating to any particular cargo to show that it was destined for military or naval use.

The Russian government replied that they could not admit that articles of dual use when addressed to private individuals in the enemy's country should be necessarily free from seizure and condemnation, since provisions and such articles of dual use, though intended for the military or naval forces of the enemy, would obviously, under such circumstances, be addressed to private individuals, possibly agents or contractors for the naval or military authorities.

Lord Lansdowne in answer stated that while H.M. government did not contend that the mere fact that the consignee was a private person should necessarily give immunity from capture, they held that to take vessels for adjudication merely because their destination was the enemy's country

would be vexatious, and constitute an unwarrantable interference with neutral commerce. To render a vessel liable to such treatment there should be circumstances giving rise to a reasonable suspicion that the provisions were destined for the enemy's forces, and it was in such a case for the captor "to establish the fact of destination for the enemy's forces before attempting to procure their condemnation" (September 30, 1904).

The protests of Great Britain led to the reference of the subject by the Russian government to a departmental committee, with the result that on October 22, 1904, a rectifying notice was issued declaring that articles capable of serving for a warlike object, including rice and food-stuffs, should be considered as contraband of war, if they are destined for the government of the belligerent power or its administration or its army or its navy or its fortresses or its naval ports; or for the purveyors thereof; and that in cases where they were addressed to private individuals these articles should not be considered as contraband of war; but that in all cases horses and beasts of burden were to be considered as contraband. As regards cotton, explanations were given by the Russian government (May 11, 1904) that the prohibition of cotton applied only to raw cotton suitable for the manufacture of explosives, and not to yarn or tissues.

Analogues of contraband.

The carriage of belligerent despatches connected with the conduct of a war or of persons in the service of a belligerent state falls within the prohibition of contraband traffic, but to distinguish such traffic from that of contraband, properly so called, the term applied to it in international law is "analogues of contraband." The penalty attaching to such carriage necessarily varies according to the degree of the analogy.

Trade between neutrals has a prima facie right to go on, in spite of war, without molestation. But if the ultimate destination of goods, though shipped first to a neutral port, is enemy's territory, then, according to the

Continuous voyages.

doctrine of "continuous voyages," the goods may be treated as if they had been shipped to the enemy's territory direct. The doctrine is entirely Anglo-Saxon in its origin[1] and development. Only in one case does it seem ever to have been actually put in force by a foreign prize court, namely, in the case of the "Doelwijk," a Dutch vessel which was adjudged good prize by an Italian court on the ground that, although bound for Djibouti, a French port, it was laden with a provision of arms of a model which had gone out of use in Europe, and could only be destined for the Abyssinians, with whom Italy was at war.

The Institute of International Law in 1896 adopted the following rule on the subject:—

"Destination to the enemy is presumed, where the shipment is to one of the enemy ports, or to a neutral port, if it is unquestionably proved by the facts that the neutral port was only a state (*étape*) towards the enemy as the final destination of a single commercial operation."

During the South African War (1899-1902) Great Britain was involved in controversy with Germany, who at first declined to recognize the existence of any rule which could interfere with trade between neutrals, the German vessels in question having been stopped on their way to a neutral port.

As stated above, the Second Hague Conference failed to come to any understanding on contraband, but the subject was exhaustively dealt with by the Conference of London (1908-1909) on the laws and customs of naval war, in the following articles:—

ART. 22.—The following articles may, without notice, be treated as contraband of war, under the name of absolute contraband: (1) Arms of all kinds, including arms for sporting purposes, and their distinctive component parts; (2) projectiles, charges and cartridges of all kinds, and their

distinctive component parts; (3) powder and explosives specially prepared for use in war; (4) gun-mountings, limber boxes, limbers, military wagons, field forges and their distinctive component parts; (5) clothing and equipment of a distinctively military character; (6) all kinds of harness of a distinctively military character; (7) saddle, draught and pack animals suitable for use in war; (8) articles of camp equipment and their distinctive component parts; (9) armour plates; (10) warships, including boats, and their distinctive component parts of such a nature that they can only be used on a vessel of war; (11) implements and apparatus designed exclusively for the manufacture of munitions of war, for the manufacture or repair of arms, or war material for use on land or sea.

ART. 23.—Articles exclusively used for war may be added to the list of absolute contraband by a declaration, which must be notified. Such notification must be addressed to the governments of other powers, or to their representatives accredited to the power making the declaration. A notification made after the outbreak of hostilities is addressed only to neutral powers.

ART. 24.—The following articles, susceptible of use in war as well as for purposes of peace, may, without notice, be treated as contraband of war, under the name of conditional contraband: (1) Foodstuffs; (2) forage and grain, suitable for feeding animals; (3) clothing, fabrics for clothing, and boots and shoes, suitable for use in war; (4) gold and silver in coin or bullion; paper money; (5) vehicles of all kinds available for use in war, and their component parts; (6) vessels, craft and boats of all kinds; floating docks, parts of docks and their component parts; (7) railway material, both fixed and rolling-stock, and material for telegraphs, wireless telegraphs and telephones; (8) balloons and flying machines and their distinctive component parts, together with accessories and articles recognizable as intended for use in connexion with balloons and flying machines; (9) fuel;

lubricants; (10) powder and explosives not specially prepared for use in war; (11) barbed wire and implements for fixing and cutting the same; (12) horseshoes and shoeing materials; (13) harness and saddlery; (14) field glasses, telescopes, chronometers and all kinds of nautical instruments.

ART. 25.—Articles susceptible of use in war as well as for purposes of peace, other than those enumerated in Articles 22 and 24, may be added to the list of conditional contraband by a declaration, which must be notified in the manner provided for in the second paragraph of Article 23.

ART. 26.—If a power waives, so far as it is concerned, the right to treat as contraband of war an article comprised in any of the classes enumerated in Articles 22 and 24, such intention shall be announced by a declaration, which must be notified in the manner provided for in the second paragraph of Article 23.

ART. 27.—Articles which are not susceptible of use in war may not be declared contraband of war.

ART. 28.—The following may not be declared contraband of war: (1) Raw cotton, wool, silk, jute, flax, hemp and other raw materials of the textile industries, and yarns of the same; (2) oil seeds and nuts; copra; (3) rubber, resins, gums and lacs; hops; (4) raw hides and horns, bones and ivory; (5) natural and artificial manures, including nitrates and phosphates for agricultural purposes; (6) metallic ores; (7) earths, clays, lime, chalk, stone, including marble, bricks, slates and tiles; (8) Chinaware and glass; (9) paper and paper-making materials; (10) soap, paint and colours, including articles exclusively used in their manufacture, and varnish; (11) bleaching powder, soda ash, caustic soda, salt cake, ammonia, sulphate of ammonia and sulphate of copper; (12) agricultural, mining, textile and printing machinery; (13) precious and semiprecious stones, pearls, mother-of-pearl and coral; (14) clocks and watches, other than chronometers; (15)

fashion and fancy goods; (16) feathers of all kinds, hairs and bristles; (17) articles of household furniture and decoration; office furniture and requisites.

ART. 29.—Likewise the following may not be treated as contraband of war: (1) Articles serving exclusively to aid the sick and wounded. They can, however, in case of urgent military necessity and subject to the payment of compensation, be requisitioned, if their destination is that specified in Article 30; (2) articles intended for the use of the vessel in which they are found, as well as those intended for the use of her crew and passengers during the voyage.

ART. 30.—Absolute contraband is liable to capture if it is shown to be destined to territory belonging to or occupied by the enemy, or to the armed forces of the enemy. It is immaterial whether the carriage of the goods is direct or entails transhipment or a subsequent transport by land.

ART. 31.—Proof of the destination specified in Article 30 is complete in the following cases: (1) When the goods are documented for discharge in an enemy port, or for delivery to the armed forces of the enemy; (2) when the vessel is to call at enemy ports only, or when she is to touch at an enemy port or meet the armed forces of the enemy before reaching the neutral port for which the goods in question are documented.

ART. 32.—Where a vessel is carrying absolute contraband, her papers are conclusive proof as to the voyage on which she is engaged, unless she is found clearly out of the course indicated by her papers and unable to give adequate reasons to justify such deviation.

ART. 33.—Conditional contraband is liable to capture if it is shown to be destined for the use of the armed forces or of a government department of the enemy state, unless in this latter case the circumstances show that the goods cannot in fact be used for the purposes of the war in progress. This

latter exception does not apply to a consignment coming under Article 24 (4).

ART. 34.—The destination referred to in Article 33 is presumed to exist if the goods are consigned to enemy authorities, or to a contractor established in the enemy country who, as a matter of common knowledge, supplies articles of this kind to the enemy. A similar presumption arises if the goods are consigned to a fortified place belonging to the enemy, or other place serving as a base for the armed forces of the enemy. No such presumption, however, arises in the case of a merchant vessel bound for one of these places if it is sought to prove that she herself is contraband. In cases where the above presumptions do not arise, the destination is presumed to be innocent. The presumptions set up by this article may be rebutted.

ART. 35.—Conditional contraband is not liable to capture, except when found on board a vessel bound for territory belonging to or occupied by the enemy, or for the armed forces of the enemy, and when it is not to be discharged in an intervening neutral port. The ship's papers are conclusive proof both as to the voyage on which the vessel is engaged and as to the port of discharge of the goods, unless she is found clearly out of the course indicated by her papers, and unable to give adequate reasons to justify such deviation.

ART. 36.—Notwithstanding the provisions of Article 35, conditional contraband, if shown to have the destination referred to in Article 33, is liable to capture in cases where the enemy country has no seaboard.

ART. 37.—A vessel carrying goods liable to capture as absolute or conditional contraband may be captured on the high seas or in the territorial waters of the belligerents throughout the whole of her voyage, even if she is to touch at a port of call before reaching the hostile destination.

ART. 38.—A vessel may not be captured on the ground that she has carried contraband on a previous occasion if such carriage is in point of fact at an end.

ART. 39.—Contraband goods are liable to condemnation.

ART. 40.—A vessel carrying contraband may be condemned if the contraband, reckoned either by value, weight, volume or freight, forms more than half the cargo.

ART. 41.—If a vessel carrying contraband is released, she may be condemned to pay the costs and expenses incurred by the captor in respect of the proceedings in the national prize court and the custody of the ship and cargo during the proceedings.

ART. 42.—Goods which belong to the owner of the contraband and are on board the same vessel are liable to condemnation.

ART. 43.—If a vessel is encountered at sea while unaware of the outbreak of hostilities or of the declaration of contraband which applies to her cargo, the contraband cannot be condemned except on payment of compensation; the vessel herself and the remainder of the cargo are not liable to condemnation or to the costs and expenses referred to in Article 41. The same rule applies if the master, after becoming aware of the outbreak of hostilities, or of the declaration of contraband, has had no opportunity of discharging the contraband. A vessel is deemed to be aware of the existence of a state of war, or of a declaration of contraband, if she left a neutral port subsequently to the notification to the power to which such port belongs of the outbreak of hostilities or of the declaration of contraband respectively, provided that such notification was made in sufficient time. A vessel is also deemed to be aware of the existence of a state of war if she left an enemy port after the outbreak of hostilities.

ART. 44.—A vessel which has been stopped on the ground that she is carrying contraband, and which is not liable to condemnation on account of the proportion of contraband on board, may, when the circumstances permit, be allowed to continue her voyage if the master is willing to hand over the contraband to the belligerent warship. The delivery of the contraband must be entered by the captor on the log-book of the vessel stopped, and the master must give the captor duly certified copies of all relevant papers. The captor is at liberty to destroy the contraband that has been handed over to him under these conditions.

See Hautefeuille, *Des droits et devoirs des nations neutres* (2nd ed., 1858); Perels, *Droit maritime international*, traduit par Arendt (Paris, 1884); Moore, *Digest of International Law* (1906); L. Oppenheim, *International Law* (1907); Barclay, *Problems of International Practice and Diplomacy* (1907). See also Hall, *International Law on Analogues of Contraband*; Smith and Sibley, *International Law as interpreted during the Russo-Japanese War, 1905*, on "Malacca" and "Prinz Heinrich" cases (mails).

(T. BA.)

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1 See Springbok case, 1866, 5 Wallace I.; on *Doelwijk* case see Brusa, *Rev. gén. de droit international public* (1897); Fauchille *id.* (1897), p. 291, also *The Times*, April 15, May 25, June 1, 1897.

CONTRACT (Lat. *contractus*, from *contrahere*, to draw together, to bind), the legal term for a bargain or agreement; some writers, following the Indian Contract Act, confine the term to agreements enforceable by law:

this, though not yet universally adopted, seems an improvement. Enforcement of good faith in matters of bargain and promise is among the most important functions of legal justice. It might not be too much to say that, next after keeping the peace and securing property against violence and fraud so that business may be possible, it is the most important. Yet we shall find that the importance of contract is developed comparatively late in the history of law. The commonwealth needs elaborate rules about contracts only when it is advanced enough in civilization and trade to have an elaborate system of credit. The Roman law of the empire dealt with contract, indeed, in a fairly adequate manner, though it never had a complete or uniform theory; and the Roman law, as settled by Justinian, appears to have satisfied the Eastern empire long after the Western nations had begun to recast their institutions, and the traders of the Mediterranean had struck out a cosmopolitan body of rules and custom known as the Law Merchant, which claimed acceptance in the name neither of Justinian nor of the Church, but of universal reason. It was amply proved afterwards that the foundations of the Roman system were strong enough to carry the fabric of modern legislation. But the collapse of the Roman power in western Christendom threw society back into chaos, and reduced men's ideas of ordered justice and law to a condition compared with which the earliest Roman law known to us is modern.

In this condition of legal ideas, which it would be absurd to call jurisprudence, the general duty of keeping faith is not recognized except as a matter of religious or social observance. Those who desire to be assured of anything that lies in promise must exact an oath, or a pledge, or personal sureties; and even then the court of their people—in England the Hundred Court in the first instance—will do nothing for them in the first case, and not much in the two latter. Probably the settlement of a blood-feud, with provisions for the payment of the fine by instalments, was the nearest approach to a continuing contract, as we now understand the term, which

the experience of Germanic antiquity could furnish. It is also probable that the performance of such undertakings, as it concerned the general peace, was at an early time regarded as material to the commonweal; and that these covenants of peace, rather than the rudimentary selling and bartering of their day, first caused our Germanic ancestors to realize the importance of putting some promises at any rate under public sanction. We have not now to attempt any reconstruction of archaic judgment and justice, or the lack of either, at any period of the darkness and twilight which precede the history of the middle ages. But the history of the law, and even the present form of much law still common to almost all the English-speaking world, can be understood only when we bear in mind that our forefathers did not start from any general conception of the state's duty to enforce private agreements, but, on the contrary, the state's powers and functions in this regard were extended gradually, unsystematically, and by shifts and devices of ingenious suitors and counsel, aided by judges, rather than by any direct provisions of princes and rulers. Money debts, it is true, were recoverable from an early time. But this was not because the debtor had promised to repay the loan; it was because the money was deemed still to belong to the creditor, as if the identical coins were merely in the debtor's custody. The creditor sued to recover money, for centuries after the Norman Conquest, in exactly the same form which he would have used to demand possession of land; the action of debt closely resembled the "real actions," and, like them, might be finally determined by a judicial combat; and down to Blackstone's time the creditor was said to have a property in the debt—property which the debtor had "granted" him. Giving credit, in this way of thinking, is not reliance on the right to call hereafter for an act, the payment of so much current money or its equivalent, to be performed by the debtor, but merely suspension of the immediate right to possess one's own particular money, as the owner of a house let for a term suspends his right to occupy it. This was

no road to the modern doctrine of contract, and the passage had to be made another way.

Action for debt.

In fact the old action of debt covered part of the ground of contract only by accident. It was really an action to recover any property that was not land; for the remedy of a dispossessed owner of chattels, afterwards known as detinue, was only a slightly varying form of it. If the property claimed was a certain sum of money, it might be due because the defendant had received money on loan, or because he had received goods of which the agreed price remained unpaid; or, in later times at any rate, because he had become liable in some way by judgment, statute or other authority of law, to pay a fine or fixed penalty to the plaintiff. Here the person recovering might be as considerable as the lord of a manor, or as mean as a "common informer"; the principle was the same. In every case outside this last class, that is to say, whenever there was a debt in the popular sense of the word, it had to be shown that the defendant had actually received the money or goods; this value received came to be called *quid pro quo*—a term unknown, to all appearance, out of England. Nevertheless the foundation of the plaintiff's right was not bargain or promise, but the unjust detention by the defendant of the plaintiff's money or goods.

Modes of proof.

We are not concerned here to trace the change from the ancient method of proof—oath backed by "good suit," *i.e.* the oaths of an adequate number of friends and neighbours—through the earlier form of jury trial, in which the jury were supposed to know the truth of their own knowledge, to the modern establishment of facts by testimony brought before a jury who are bound to give their verdict according to the evidence. But there was one mode of proof which, after the Norman Conquest, made a material addition to the substantive law. This was the proof by writing, which means writing

authenticated by seal. Proof by writing was admitted under Roman influence, but, once admitted, it acquired the character of being conclusive which belonged to all proof in early Germanic procedure. Oath, ordeal and battle were all final in their results. When the process was started there was no room for discussion. So the sealed writing was final too, and a man could not deny his own deed. We still say that he cannot, but with modern refinements. Thus the deed, being allowed as a solemn and probative document, furnished a means by which a man could bind himself, or rather effectually declare himself bound, to anything not positively forbidden by law. Whoever could afford parchment and the services of a clerk might have the benefit of a "formal contract" in the Roman sense of the term. At this day the form of deed called a bond or "obligation" is, as it stands settled after various experiments, extremely artificial; but it is essentially a solemn admission of liability, though its conclusive stringency has been relaxed by modern legislation and practice in the interest of substantial justice. By this means the performance of all sorts of undertakings, pecuniary and otherwise, could be and was legally secured. Bonds were well known in the 13th century, and from the 14th century onwards were freely used for commercial and other purposes; as for certain limited purposes they still are. The "covenant" of modern draftsmen is a direct promise made by deed; it occurs mainly as incident to conveyances of land. The medieval "covenant," *conventio*, was, when we first hear of it, practically equivalent to a lease, and never became a common instrument of miscellaneous contracting, though the old books recognize the possibility of turning it to various uses of which there are examples; nor had it any sensible influence on the later development of the law. On the whole, in the old common law one could do a great deal by deed, but very little without deed. The minor bargains of daily life, so far as they involved mutual credit, were left to the jurisdiction of inferior courts, of the Law Merchant, and—last, not least—of the Church.

Popular custom, in all European countries, recognized simpler ways of pledging faith than parchment and seal. A handshake was enough to bind a bargain. Whatever secular law might say, the Church said it was an open sin to break plighted faith; a matter, therefore, for spiritual correction, in other words, for compulsion exercised on the defaulter by the bishop's or the archdeacon's court, armed with the power of excommunication. In this way the ecclesiastical courts acquired much business which was, in fact, as secular as that of a modern county court, with the incident profits. Medieval courts lived by the suitors' fees. What were the king's judges to do? However high they put their claims in the course of the rivalry between Church and Crown, they could not effectually prohibit the bishop or his official from dealing with matters for which the king's court provided no remedy. Continental jurists had seen their way, starting from the Roman system as it was left by Justinian, to reduce its formalities to a vanishing quantity, and expand their jurisdiction to the full breadth of current usage. English judges could not do this in the 15th century, if they could ever have done so. Nor would simplification of the requisites of a deed, such as has now been introduced in many jurisdictions, have been of much use at a time when only a minority even of well-to-do laymen could write with any facility.

Fidel laesio.

There was no principle and no form of action in English law which recognized any general duty of keeping promises. But could not breach of faith by which a party had suffered be treated as some kind of legal wrong? There was a known action of trespass and a known action of deceit, this last of a special kind, mostly for what would now be called abuse of the process of the court; but in the later middle ages it was an admitted remedy for giving a false warranty on a sale of goods. Also there was room for actions "on the case," on facts analogous to those covered by the old writs, though not precisely within their terms. If the king's judges were to capture this important branch of business from the clerical hands which threatened to

engross it, the only way was to devise some new form of action on the case. There were signs, moreover, that the court of chancery would not neglect so promising a field if the common law judges left it open.

The mere fact of unfulfilled promise was not enough, in the eyes of medieval English lawyers, to give a handle to the law. But injury caused by reliance on another man's undertaking was different. The special undertaking or "assumption" creates a duty which is broken by fraudulent or incompetent miscarriage in the performance. I profess to be a skilled farrier, and lame your horse. It is no trespass, because you trusted the horse to me; but it is something like a trespass, and very like a deceit. I profess to be a competent builder; you employ me to build a house, and I scamp the work so that the house is not fit to live in. An action on the case was allowed without much difficulty for such defaults. The next step, and a long one, was to provide for total failure to perform. The builder, instead of doing bad work, does nothing at all within the time agreed upon for completing the house. Can it be said that he has done a wrong? At first the judges felt bound to hold that this was going too far; but suitors anxious to have the benefit of the king's justice persevered, and in the course of the 15th century the new form of action, called *assumpsit* from the statement of the defendant's undertaking on which it was founded, was allowed as a remedy for non-performance as well as for faulty performance. Being an action for damages, and not for a certain amount, it escaped the strict rules of proof which applied to the old action of debt; being in form for a kind of trespass, and thus a privileged appeal to the king to do right for a breach of his peace, it escaped likewise the risk of the defendant clearing himself by oath according to the ancient popular procedure. Hence, as time went on, suitors were emboldened to use "assumpsit" as an alternative for debt, though it had been introduced only for cases where there was no other remedy. By the end of the 16th century they got their way; and it became a settled doctrine that the existence of a

Assumpsit.

debt was enough for the court to presume an undertaking to pay it. The new form of action was made to cover the whole ground of informal contracts, and, by extremely ingenious devices of pleading, developed from the presumption or fiction that a man had promised to pay what he ought, it was extended in time to a great variety of cases where there was in fact no contract at all.

Consideration.

The new system gave no new force to gratuitous promises. For it was assumed, as the foundation of the jurisdiction, that the plaintiff had been induced by the defendant's undertaking, and with the defendant's consent, to alter his position for the worse in some way. He had paid or bound himself to pay money, he had parted with goods, he had spent time in labour, or he had foregone some profit or legal right. If he had not committed himself to anything on the strength of the defendant's promise, he had suffered no damage and had no cause of action. Disappointment of expectations is unpleasant, but it is not of itself *damnum* in a legal sense. To sum up the effect of this in modern language, the plaintiff must have given value of some kind, more or less, for the defendant's undertaking. This something given by the promisee and accepted by the promisor in return for his undertaking is what we now call the *consideration* for the promise. In cases where debt would also lie, it coincides with the old requirement of value received (*quid pro quo*) as a condition of the action of debt being available. But the conception is far wider, for the consideration for a promise need not be anything capable of delivery or possession. It may be money or goods; but it may also be an act or series of acts; further (and this is of the first importance for our modern law), it may itself be a promise to pay money or deliver goods, or to do work, or otherwise to act or not to act in some specified way. Again, it need not be anything which is obviously for the promisor's benefit. His acceptance shows that he set some value on it; but in truth the promisee's burden, and not the promisor's benefit, is material. The last refinement of

holding that, when mutual promises are exchanged between parties, each promise is a consideration for the other and makes it binding, was conclusively accepted only in the 17th century. The result was that promises of mere bounty could no more be enforced than before, but any kind of lawful bargain could; and there is no reason to doubt that this was in substance what most men wanted. Ancient popular usage and feeling show little more encouragement than ancient law itself to merely gratuitous alienation or obligations. Also (subject, till quite modern times, to the general rule of common-law procedure that parties could not be their own witnesses, and subject to various modern statutory requirements in various classes of cases) no particular kind of proof was necessary. The necessity of consideration for the validity of simple contracts was unfortunately confused by commentators, almost from the beginning of its history, with the perfectly different rules of the Roman law about *nudum pactum*, which very few English lawyers took the pains to understand. Hasty comparison of misunderstood Roman law, sometimes in its civil and sometimes in its ecclesiastical form, is answerable for a large proportion of the worst faults in old-fashioned text-books. Doubtless many canonists, probably some common lawyers, and possibly some of the judges of the Renaissance time, supposed that *ex nudo pacio non oritur actio* was in some way a proposition of universal reason; but it is a long way from this to concluding that the Roman law had any substantial influence on the English.

The doctrine of consideration is in fact peculiar to those jurisdictions where the common law of England is in force, or is the foundation of the received law, or, as in South Africa, has made large encroachments upon it in practice. Substantially similar results are obtained in other modern systems by professing to enforce all deliberate promises, but imposing stricter conditions of proof where the promise is gratuitous.

As obligations embodied in the solemn form of a deed were thereby made enforceable before the doctrine of consideration was known, so they still remain. When a man has by deed declared himself bound, there is no need to look for any bargain, or even to ask whether the other party has assented. This rugged fragment of ancient law remains embedded in our elaborate modern structure. Nevertheless gratuitous promises, even by deed, get only their strict and bare rights. There may be an action upon them, but the powerful remedy of specific performance—often the only one worth having—is denied them. For this is derived from the extraordinary jurisdiction of the chancellor, and the equity administered by the chancellor was not for plaintiffs who could not show substantial merit as well as legal claims. The singular position of promises made by deed is best left out of account in considering the general doctrine of the formation of contracts; and as to interpretation there is no difference. In what follows, therefore, it will be needless, as a rule, to distinguish between "parol" or "simple" contracts, that is, contracts not made by deed, and obligations undertaken by deed.

Deeds.

From the conception of a promise being valid only when given in return for something accepted in consideration of the promise, it follows that the giving of the promise and of the consideration must be simultaneous. Words of promise uttered before there is a consideration for them can be no more than an offer; and, on the other hand, the obligation declared in words, or inferred from acts and conduct, on the acceptance of a consideration, is fixed at that time, and cannot be varied by subsequent declaration, though such declarations may be material as admissions. It was a long while, however, before this consequence was clearly perceived. In the 18th century it was attempted, and for a time with considerable success, to extend the range of enforceable promises without regard to what the principles of the law would bear, in order to satisfy a sense of natural justice. This movement was checked only

Promise and offer.

within living memory, and traces of it remain in certain apparently anomalous rules which are indeed of little practical importance, but which private writers, at any rate, cannot safely treat as obsolete. However, the question of "past consideration" is too minute and technical to be pursued here. The general result is that a binding contract is regularly constituted by the acceptance of an offer, and at the moment when it is accepted; and, however complicated the transaction may be, there must always, in the theory of English law, be such a moment in every case where a contract is formed. It also follows that an offer before acceptance creates no duty of any kind ("A revocable promise is unknown to our law"—Anson); which is by no means necessarily the case in systems where the English rule of consideration is unknown. The question what amounts to final acceptance of an offer is, on the other hand, a question ultimately depending on common sense, and must be treated on similar lines in all civilized countries where the business of life is carried on in a generally similar way. The rules that an offer is understood to be made only for a reasonable time, according to the nature of the case, and lapses if not accepted in due time; that an expressed revocation of an offer can take effect only if communicated to the other party before he has accepted; that acceptance of an offer must be according to its terms, and a conditional or qualified acceptance is only a new proposal, and the like, may be regarded as standing on general convenience as much as on any technical ground.

Correspondence.

Great difficulties have arisen, and in other systems as well as in the English, as to the completion of contracts between persons at a distance. There must be some rule, and yet any rule that can be framed must seem arbitrary in some cases. On the whole the modern doctrine is to some such effect as the following:—

The proposer of a contract can prescribe or authorize any mode, or at least any reasonable mode, of acceptance, and if he specifies none he is deemed to authorize the use of any reasonable mode in common use, and especially the post. Acceptance in words is not always required; an offer may be well accepted by an act clearly referable to the proposed agreement, and constituting the whole or part of the performance asked for—say the despatch of goods in answer to an order by post, or the doing of work bespoken; and it seems that in such cases further communication—unless expressly requested—is not necessary as matter of law, however prudent and desirable it may be. Where a promise and not an act is sought (as where a tradesman writes a letter offering goods for sale on credit), it must be communicated; in the absence of special direction letter post or telegraph may be used; and, further, the acceptor having done his part when his answer is committed to the post. English courts now hold (after much discussion and doubt) that any delay or miscarriage in course of post is at the proposer's risk, so that a man may be bound by an acceptance he never received. It is generally thought—though there is no English decision—that, in conformity with this last rule, a revocation by telegraph of an acceptance already posted would be inoperative. Much more elaborate rules are laid down in some continental codes. It seems doubtful whether their complication achieves any gain of substantial justice worth the price. At first sight it looks easy to solve some of the difficulties by admitting an interval during which one party is bound and the other not. But, apart from the risk of starting fresh problems as hard as the old ones, English principles, as above said, require a contract to be concluded between the parties at one point of time, and any exception to this would have to be justified by very strong grounds of expediency. We have already assumed, but it should be specifically stated, that neither offers nor acceptances are confined to communications made in spoken or written words. Acts or signs may and constantly do signify proposal and assent. One does not in terms

request a ferryman to put one across the river. Stepping into the boat is an offer to pay the usual fare for being ferried over, and the ferryman accepts it by putting off. This is a very simple case, but the principle is the same in all cases. Acts fitted to convey to a reasonable man the proposal of an agreement, or the acceptance of a proposal he has made, are as good in law as equivalent express words. The term "implied contract" is current in this connexion, but it is unfortunately ambiguous. It sometimes means a contract concluded by acts, not words, of one or both parties, but still a real agreement; sometimes an obligation imposed by law where there is not any agreement in fact, for which the name "quasi-contract" is more appropriate and now usual.

Interpretation.

The obligation of contract is an obligation created and determined by the will of the parties. Herein is the characteristic difference of contract from all other branches of law. The business of the law, therefore, is to give effect so far as possible to the intention of the parties, and all the rules for interpreting contracts go back to this fundamental principle and are controlled by it. Every one knows that its application is not always obvious. Parties often express themselves obscurely; still oftener they leave large parts of their intention unexpressed, or (which for the law is the same thing) have not formed any intention at all as to what is to be done in certain events. But even where the law has to fill up gaps by judicial conjecture, the guiding principle still is, or ought to be, the consideration of what either party has given the other reasonable cause to expect of him. The court aims not at imposing terms on the parties, but at fixing the terms left blank as the parties would or reasonably might have fixed them if all the possibilities had been clearly before their minds. For this purpose resort must be had to various tests: the court may look to the analogy of what the parties have expressly provided in case of other specified events, to the constant or general usage of persons engaged in like business, and, at need, ultimately to the court's own sense

of what is just and expedient. All auxiliary rules of this kind are subject to the actual will of the parties, and are applied only for want of sufficient declaration of it by the parties themselves. A rule which can take effect against the judicially known will of the parties is not a rule of construction or interpretation, but a positive rule of law. However artificial some rules of construction may seem, this test will always hold. In modern times the courts have avoided laying down new rules of construction, preferring to keep a free hand and deal with each case on its merits as a whole. It should be observed that the fulfilment of a contract may create a relation between the parties which, once established, is governed by fixed rules of law not variable by the preceding agreement. Marriage is the most conspicuous example of this, and perhaps the only complete one in our modern law.

Evidence.

There are certain rules of evidence which to some extent guide or restrain interpretation. In particular, oral testimony is not allowed to vary the terms of an agreement reduced to writing. This is really in aid of the parties' deliberate intention, for the object of reducing terms to writing is to make them certain. There are apparent exceptions to the rule, of which the most conspicuous is the admission of evidence to show that words were used in a special meaning current in the place or trade in question. But they are reducible, it will be found, to applications (perhaps over-subtle in some cases) of the still more general principles that, before giving legal force to a document, we must know that it is really what it purports to be, and that when we do give effect to it according to its terms we must be sure of what its terms really say. The rules of evidence here spoken of are modern, and have nothing to do with the archaic rule already mentioned as to the effect of a deed.

Every contracting party is bound to perform his promise according to its terms, and in case of any doubt in the sense in which the other party would reasonably understand the promise. Where the performance on one or both

Performance.

sides extends over an appreciable time, continuously or by instalments, questions may arise as to the right of either party to refuse or suspend further performance on the ground of some default on the other side. Attempts to lay down hard and fast rules on such questions are now discouraged, the aim of the courts being to give effect to the true substance and intent of the contract in every case. Nor will the court hold one part of the terms deliberately agreed to more or less material than another in modern business dealings. “In the contracts of merchants time is of the essence,” as the Supreme Court of the United States has said in our own day. Certain ancient rules restraining the apparent literal effect of common provisions in mortgages and other instruments were in truth controlling rules of policy. New rules of this kind can be made only by legislation. Whether the parties did or did not in fact intend the obligation of a contract to be subject to unexpressed conditions is, however, a possible and not uncommon question of interpretation. One class of cases giving rise to such questions is that in which performance becomes impossible by some external cause not due to the promisor’s own fault; a similar but not identical one is that in which the agreement could be literally performed, and yet the performance would not give the promisor the substance of what he bargained for; as happened in the “coronation cases” arising out of the postponement of the king’s coronation in 1902. As to promises obviously absurd or impossible from the first, they are unenforceable only on the ground that the parties cannot have seriously meant to create a liability. For precisely the same reason, supported by the general usage and understanding of mankind, common social engagements, though they often fulfil all other requisites of a contract, have never been treated as binding in law.

In all matters of contract, as we have said, the ascertained will of the parties prevails. But this means a will both lawful and free. Hence there are limits to the force of the general rule, fixed partly by the law of the land,

Illegality.

which is above individual will and interests, partly by the need of securing good faith and justice between the parties themselves against fraud or misadventure. Agreements cannot be enforced when their performance would involve an offence against the law. There may be legal offence, it must be remembered, not only in acts commonly recognized as criminal, disloyal or immoral, but in the breach or non-observance of positive regulations made by the legislature, or persons having statutory authority, for a great variety of purposes. It would be useless to give details on the subject here. Again, there are cases where an agreement may be made and performed without offending the law, but on grounds of "public policy" it is not thought right that the performance should be a matter of legal obligation, even if the ordinary conditions of an enforceable contract are satisfied. A man may bet, in private at any rate, if he likes, and pay or receive as the event may be; but for many years the winner has had no right of action against the loser. Unfortunate timidity on the part of the judges, who attempted to draw distinctions instead of saying boldly that they would not entertain actions on wagers of any kind, threw this topic into the domain of legislation; and the laudable desire of parliament to discourage gambling, so far as might be, without attempting impossible prohibitions, has brought the law to a state of ludicrous complexity in both civil and criminal jurisdiction. But what is really important under this doctrine of public policy is the confinement of "contracts in restraint of trade" within special limits. In the middle ages and down to modern times there was a strong feeling—not merely an artificial legal doctrine—against monopolies and everything tending to monopoly. Agreements to keep up prices or not to compete were regarded as criminal. Gradually it was found that some kind of limited security against competition must be allowed if such transactions as the sale of a going concern with its goodwill, or the retirement of partners from a continuing firm, or the employment of confidential servants in matters involving trade

secrets, were to be carried on to the satisfaction of the parties. Attempts to lay down fixed rules in these matters were made from time to time, but they were finally discredited by the decision of the House of Lords in the Maxim-Nordenfelt Company's case in 1894. Contracts "in restraint of trade" will now be held valid, provided that they are made for valuable consideration (this even if they are made by deed), and do not go beyond what can be thought reasonable for the protection of the interests concerned, and are not injurious to the public. (The Indian Contract Act, passed in 1872, has unfortunately embodied views now obsolete, and remains unamended.) All that remains of the old rules in England is the necessity of valuable consideration, whatever be the form of the contract, and a strong presumption—but not an absolute rule of law—that an unqualified agreement not to carry on a particular business is not reasonable.

Fraud.

Where there is no reason in the nature of the contract for not enforcing it, the consent of a contracting party may still not be binding on him because not given with due knowledge, or, if he is in a relation of dependence to the other party, with independent judgment. Inducing a man by deceit to enter into a contract may always be treated by the deceived party as a ground for avoiding his obligation, if he does so within a reasonable time after discovering the truth, and, in particular, before any innocent third person has acquired rights for value on the faith of the contract (see FRAUD). Coercion would be treated on principle in the same way as fraud, but such cases hardly occur in modern times. There is a kind of moral domination, however, which our courts watch with the utmost jealousy, and repress under the name of "undue influence" when it is used to obtain pecuniary advantage. Persons in a position of legal or practical authority—guardians, confidential advisers, spiritual directors, and the like—must not abuse their authority for selfish ends. They are not forbidden to take benefits from those who depend on

them or put their trust in them; but if they do, and the givers repent of their bounty, the whole burden of proof is on the takers to show that the gift was in the first instance made freely and with understanding. Large voluntary gifts or beneficial contracts, outside the limits within which natural affection and common practice justify them, are indeed not encouraged in any system of civilized law. Professional money lenders were formerly checked by the usury law: since those laws were repealed in 1854, courts and juries have shown a certain astuteness in applying the rules of law as to fraud and undue influence—the latter with certain special features—to transactions with needy "expectant heirs" and other improvident persons which seem on the whole unconscionable. The Money Lenders Act of 1900 has fixed and (as finally interpreted by the House of Lords) also sharpened these developments. In the case of both fraud and undue influence, the person entitled to avoid a contract may, if so advised, ratify it afterwards; and ratification, if made with full knowledge and free judgment, is irrevocable. A contract made with a person deprived by unsound mind or intoxication of the capacity to form a rational judgment is on the same footing as a contract obtained by fraud, if the want of capacity is apparent to the other party.

Misrepresentation.

There are many cases in which a statement made by one party to the other about a material fact will enable the other to avoid the contract if he has relied on it, and it was in fact untrue, though it may have been made at the time with honest belief in its truth. This is so wherever, according to the common course of business, it is one party's business to know the facts, and the other practically must, or reasonably may, take the facts from him. In some classes of cases even inadvertent omission to disclose any material fact is treated as a misrepresentation. Contracts of insurance are the most important; here the insurer very seldom has the means of making any effective inquiry of his own. Misdescription of real property on a sale,

without fraud, may according to its importance be a matter for compensation or for setting aside the contract. Promoters of companies are under special duties as to good faith and disclosure which have been worked out at great length in the modern decisions. But company law has become so complex within the present generation that, so far from throwing much light on larger principles, it is hardly intelligible without some previous grasp of them. Sometimes it is said that misrepresentation (apart from fraud) of any material fact will serve to avoid any and every kind of contract. It is submitted that this is certainly not the law as to the sale of goods or as to the contract to marry, and therefore the alleged rule cannot be laid down as universal. But it must be remembered that parties can, if they please, and not necessarily by the express terms of the contract itself, make the validity of their contract conditional on the existence of any matter of fact whatever, including the correctness of any particular statement. If they have done this, and the fact is not so, the contract has no force; not because there has been a misrepresentation, but because the parties agreed to be bound if the fact was so and not otherwise. It is a question of interpretation whether in a given case there was any such condition.

Mistake.

Mistake is said to be a ground for avoiding contracts, and there are cases which it is practically convenient to group under this head. On principle they seem to be mostly reducible to failure of the acceptance to correspond with the offer, or absence of any real consideration for the promise. In such cases, whether there be fraud or not, no contract is ever formed, and therefore there is nothing which can be ratified—a distinction which may have important effects. Relief against mistake is given where parties who have really agreed, or rather their advisers, fail to express their intention correctly. Here, if the original true intention is fully proved—as to which the court is rightly cautious—the faulty document can be judicially rectified.

By the common law an infant (*i.e.* a person less than twenty-one years old) was bound by contracts made for "necessaries," *i.e.* such commodities as a jury holds, and the court thinks they may reasonably hold, suitable and required for the person's condition; also by contracts otherwise clearly for his benefit; all other contracts he might confirm or avoid after coming of age. An extremely ill-drawn act of 1874 absolutely deprived infants of the power of contracting loans, contracting for the supply of goods other than necessaries, and stating an account so as to bind themselves; it also disabled them from binding themselves by ratification. The liability for necessaries is now declared by legislative authority in the Sale of Goods Act 1893; the modern doctrine is that it is in no case a true liability on contract. There is an obligation imposed by law to pay, not the agreed price, but a reasonable price. Practically, people who give credit to an infant do so at their peril, except in cases of obvious urgency.

Disability.

Married women were incapable by the common law of contracting in their own names. At this day they can hold separate property and bind themselves to the extent of that property—not personally—by contract. The law before the Married Women's Property Acts (1882 and 1893, and earlier acts now superseded and repealed) was a very peculiar creature of the court of chancery; the number of cases in which it is necessary to go back to it is of course decreasing year by year. But a married woman can still be restrained from anticipating the income of her separate property, and the restriction is still commonly inserted in marriage settlements.

There is a great deal of philosophical interest about the nature and capacities of corporations, but for modern practical purposes it may be said that the legal powers of British corporations are directly or indirectly determined by acts of parliament. For companies under the Companies Acts the controlling instrument or written constitution is the memorandum of

association. Company draftsmen, taught by experience, nowadays frame this in the most comprehensive terms. Questions of either personal or corporate disability are less frequent than they were. In any case they stand apart from the general principles which characterize our law of contract.

Contract and property.

The rights created by contract are personal rights against the promisors and their legal representatives, and therefore different in kind from the rights of ownership and the like which are available against all the world. Nevertheless they may be and very commonly are capable of pecuniary estimation and estimated as part of a man's assets. Book debts are the most obvious example. Such rights are property in the larger sense: they are in modern law transmissible and alienable, unless the contract is of a kind implying personal confidence, or a contrary intention is otherwise shown. The rights created by negotiable instruments are an important and unique species of property, being not only exchangeable but the very staple of commercial currency. Contract and conveyance, again, are distinct in their nature, and sharply distinguished in the classical Roman law. But in the common law property in goods is transferred by a complete contract of sale without any further act, and under the French civil code and systems which have followed it a like rule applies not only to movables but to immovables. In English law procuring a man to break his contract is a civil wrong against the other contracting party, subject to exceptions which are still not clearly defined.

AUTHORITIES.—History: Ames, "The History of Assumpsit," *Harvard Law Rev.* ii. 1, 53 (Cambridge, Mass. 1889); Pollock and Maitland, *History of English Law*, 2nd ed., ii. 184-239 (Cambridge, 1898). Modern: Pollock, article "Contract" in *Encyclopaedia of the Laws of England* (2nd ed., London, 1907), a technical summary of the modern law; the same writer's edition of the Indian Contract Act (assisted by D. F. Mulla, London and

Bombay, 1905) restates and discusses the principles of the common law besides commenting on the provisions of the Act in detail. Of the text-books, Anson, *English Law of Contract*, reached an eleventh edition in 1906; Harriman, *Law of Contracts* (second edition, 1901); Leake, *Principles of the Law of Contract* (fifth edition by Randall, 1906); Pollock, *Principles of Contract* (eighth edition, 1910, third American edition, Wald's completed by Williston, New York, 1906). O. W. Holmes's (justice of the Supreme Court of the United States) *The Common Law* (Boston, Mass. 1881) is illuminating on contract as on other legal topics, though the present writer cannot accept all the learned judge's historical conjectures. (F. Po.)

CONTRACTILE VACUOLE, in biology, a spherical space filled with liquid, which at intervals discharges into the medium; it is found in all fresh-water groups of Protozoa, and some marine forms, also in the naked aquatic reproductive cells of Algae and Fungi. It is absent in states with a distinct cell-wall to resist excessive turgescence, such as would lead to the rupture of a naked cell, and we conclude that its chief function is to prevent such turgescence in unprotected naked cells. It fulfils also respiratory and renal functions, and is comparable, physiologically, to the contractile vesicle or bladder of Rotifers and Turbellarians. In many species it is part of a complex of canals or spaces in the protoplasm.

See M. Hartog, British Association *Reports*, and Degen, *Botanische Zeitung*, vol. lxiii. Abt. 1 (1905) (see also Protozoa; Protoplasm).

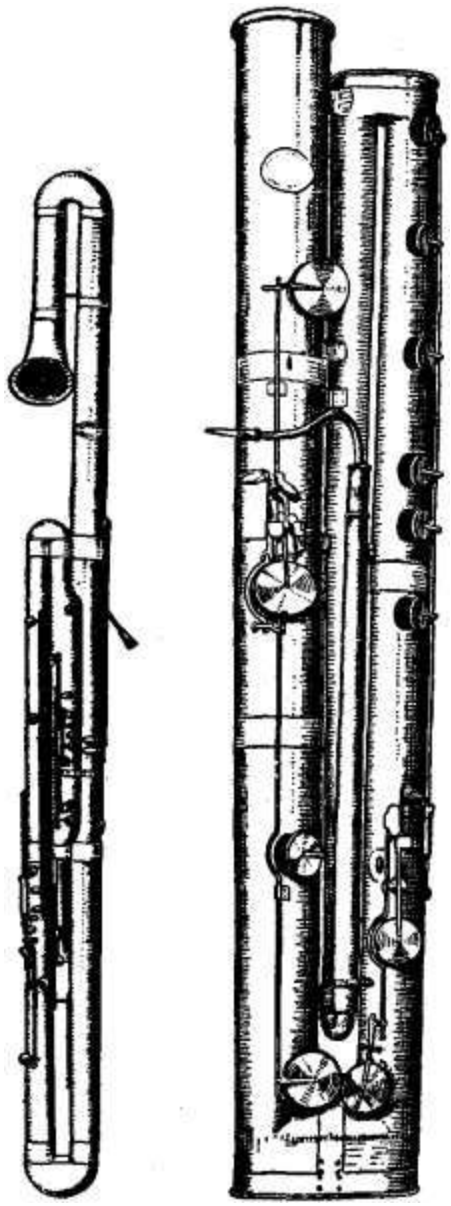
CONTRADICTION, PRINCIPLE OF (*principium contradictionis*), in logic, the term applied to the second of the three primary "laws of thought." The oldest statement of the law is that contradictory statements cannot both at the same time be true, *e.g.* the two propositions "A is B" and "A is not B" are mutually exclusive. A may be B at one time, and not at another; A may be partly B and partly not B at the same time; but it is impossible to predicate of the same thing, at the same time, and in the same sense, the absence and the presence of the same quality. This is the statement of the law given by Aristotle (τὸ γὰρ αὐτὸ ὑπάρχειν τε καὶ μὴ ὑπάρχειν ἀδύνατον τῷ αὐτῷ καὶ κατὰ τὸ αὐτό, *Metaph.* Γ 3, 1005 b 19). It takes no account of the truth of either proposition; if one is true, the other is not; one of the two must be true.

Modern logicians, following Leibnitz and Kant, have generally adopted a different statement, by which the law assumes an essentially different meaning. Their formula is "A is not not-A"; in other words it is impossible to predicate of a thing a quality which is its contradictory. Unlike Aristotle's law this law deals with the necessary relation between subject and predicate in a single judgment. Whereas Aristotle states that *one or other* of two contradictory propositions must be false, the Kantian law states that a particular kind of proposition is *in itself* necessarily false. On the other hand there is a real connexion between the two laws. The denial of the statement "A is not-A" presupposes some knowledge of what A is, *i.e.* the statement A is A. In other words a judgment about A is implied. Kant's analytical propositions depend on presupposed concepts which are the same for all people. His statement, regarded as a logical principle purely and apart from material facts, does not therefore amount to more than that of Aristotle, which deals simply with the significance of negation.

See text-books of Logic, *e.g.* C. Sigwart's *Logic* (trans. Helen Dendy, London, 1895), vol. i. pp. 142 foll.; for the various expressions of the law

see Ueberweg's *Logik*, § 77; also J. S. Mill, *Examination of Hamilton*, 471; Venn, *Empirical Logic*.

CONTRAFAGOTTO, DOUBLE BASSOON or *Contrabassoon* (Fr. *contrebasson*; Ger. *Kontrafagott*), a wood-wind instrument of the double reed family, which it completes as grand bass, the other members being the oboe, cor anglais, and bassoon. The contrafagotto corresponds to the double bass in strings, to the contrabass tuba in the brass wind, and to the pedal clarinet in the single reed wood wind.

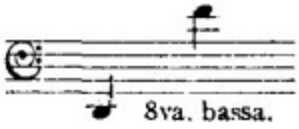


There are at the present day three distinct makes of contrafagotto. (1) The modern German (fig. 1) is founded on the older models, resembling the bassoon, the best-known being Heckel's of Biebrich-am-Rhein, used at Bayreuth and in many German orchestras. In this model the characteristics of the bassoon are preserved, and the tone is of true fagotto quality extended in its lower register. The Heckel contrafagotto consists of a wooden tube 16 ft. 4 in. long with a conical bore, and doubled back four times upon itself to make it less unwieldy. It is thus about the same length as the bassoon and terminates in a bell 4 in. in diameter pointing downwards. The crook consists of a small brass tube about 2 ft. long, having a very narrow bore, to which is bound the double-reed mouthpiece. (2) The modern English double bassoon is one designed by Dr W. H. Stone, and made under his superintendence by Haseneier of Coblenz. It is stated that instruments of this pattern are less fatiguing to blow than those resembling the bassoon. The bore is truly conical, starting with a diameter of ¼ in. at the reed and ending in a diameter of 4 in. at the open end of the tube which points upwards and has no defined bell,

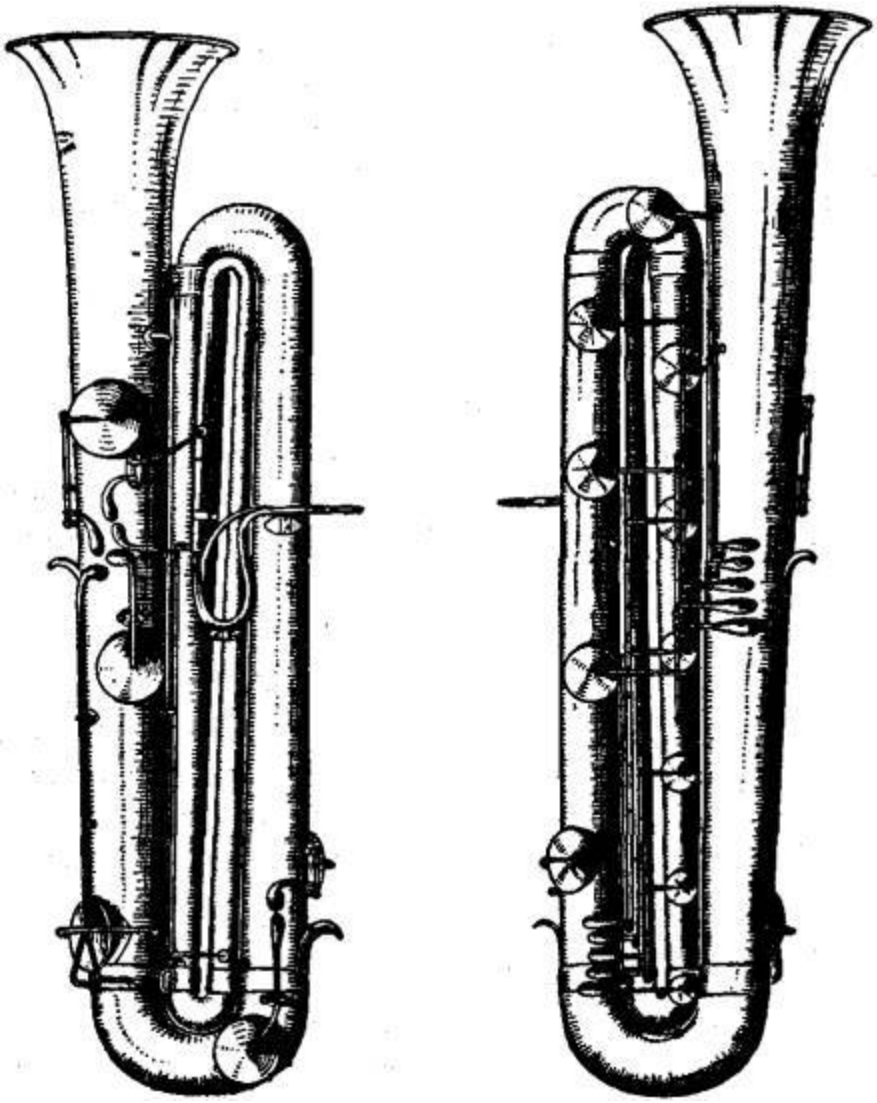
FIG. 1.—Contrafagotto, German model (Wilhelm Heckel).

From Capt. C. R. Day's *Cat. of Mus. Inst.* by permission of Fyre & Spottiswoode.

FIG. 2.—Contrafagotto, Haseneier-Morton model.

being merely finished with a rim. Alfred Morton, in England, has constructed double bassoons on Dr Stone's design (fig. 2). (3) The third model is of brass and consists of a conical tube of wide calibre some 15 or 16 ft. long, curved round four times upon itself and having a brass tuba or euphonium bell which points upwards. This brass model, usually known as the Belgian or French (fig. 3), was really of Austrian origin, having been first introduced by Schöllnast of Presburg about 1839. B. F. Czerveny of Königgrätz and Victor Mahillon of Brussels both appear to have followed up this idea independently; the former producing a metal contrafagotto in E♭ in 1856 and one in B♭ which he called sub-contrafagotto in 1867, while Mahillon's was ready in 1868. In the brass contrafagotto the lateral holes are pierced at theoretically correct intervals along the bore, and have a diameter almost equal to the section of the bore at the point where the hole is pierced. The octave harmonic only is obtainable on this instrument owing to the great length of the bore and its large calibre. There are therefore two octave keys which give a chromatic compass 

The modern wooden contrafagotto has a pitch one octave below that of the bassoon and three below that of the oboe; its compass extending from 16 ft. C. to middle C. The harmonics of the octave in the middle register and of the 12th in the upper register are obtained by skilful manipulation of the reed with the lips and increased pressure of the breath. The notes of both extremes are difficult to produce.

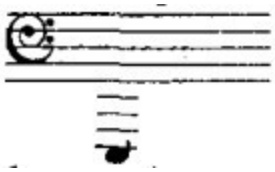


Back. Front.

FIG. 3.—The French or Belgian Contrafagotto.

Although the double bassoon is not a transposing instrument the music for it is written an octave higher than the real sounds in order to avoid the ledger lines. The quality of tone is somewhat rough and rattling in the lowest register, the volume of sound not being quite adequate considering the depth of the pitch. In the middle and upper registers the tone of the wooden contrafagotto possesses all the characteristics of the bassoon. The

contrafagotto has a complete chromatic compass, and it may therefore be played in any key. Quick passages are avoided since they would be neither easy nor effective, the instrument being essentially a slow-speaking one. The lowest notes are only possible to a good player, and cannot be obtained *piano*; nevertheless, the instrument forms a fine bass to the reed family, and supplies in the orchestra the notes missing in the double bass in order to reach 16 ft. C.

The origin of the contrafagotto, like that of the oboe (*q.v.*) must be sought in the highest antiquity (see AULOS). Its immediate forerunner was the double bombard or bombardino or the great double quintpommer whose compass extended downwards to E  .

It is not known precisely when the change took place, though it was probably soon after the transformation of the bassoon, but Handel scored for the instrument and it was used in military bands before being adopted in the orchestra. The original instrument made for Handel by T. Stanesby, junior, and played by J. F. Lampe at the Marylebone Gardens in 1739, was exhibited at the Royal Military Exhibition, London, in 1890. Owing to its faulty construction and weak rattling tone the double bassoon fell into disuse, in spite of the fact that the great composers Haydn, Mozart and Beethoven scored for it abundantly; the last used it in the C minor and choral symphonies and wrote an *obbligato* for it in *Fidelio*. It was restored to favour in England by Dr W. H. Stone.

(K. S.)

CONTRALTO (from Ital. *contra-alto*, *i.e.* next above the alto), the term for the lowest variety of the female voice, as distinguished from the soprano and mezzo-soprano. Originally it signified, in choral music, the part next higher than the alto, given to the falsetto counter-tenor.

CONTRAPUNTAL FORMS, in Music. The forms of music may be considered in two aspects, the texture of the music from moment to moment, and the shape of the musical design as a whole. Historically the texture of music became definitely organized long before the shape could be determined by any but external or mechanical conceptions. The laws of musical texture were known as the laws of "counterpoint" (see COUNTERPOINT and HARMONY). The "contrapuntal" forms, then, are historically the earliest and aesthetically the simplest in music; the simplest, that is to say, in principle, but not necessarily the easiest to appreciate or to execute. Their simplicity is like that of mathematics, the simplicity of the elements involved; but the intricacy of their details and the subtlety of their expression may easily pass the limits of popularity, while art of a much more complex nature may masquerade in popular guise; just as mathematical science is seldom popularized, while biology masquerades in infant schools as "natural history." Here, however, the resemblance between counterpoint and mathematics ends, for the simplicity of genuine contrapuntal style is a simplicity of emotion as well as of principle; and if the style has a popular reputation of being severe and abstruse, this is largely because the popular conception of emotion is conventional and dependent upon an excessive amount of external nervous stimulus.

1. Canonic Forms and Devices.

In the *canonic* forms, the earliest known in music as an independent art, the laws of texture also determine the shape of the whole, so that it is impossible, except in the light of historical knowledge, to say which is prior to the other. The principle of canon being that one voice shall reproduce the material of another note for note, it follows that in a composition where all parts are canonic and where the material of the leading part consists of a pre-determined melody, such as a Gregorian chant or a popular song there remains no room for further consideration of the shape of the work. Hence, quite apart from their expressive power and their value in teaching composers to attain harmonic fluency under difficulties, the canonic forms played the leading part in the music of the 15th and 16th centuries; nor indeed have they since fallen into neglect without grave injury to the art. But strict canon soon proved inadequate, and even dangerous, as the sole regulating principle in music; and its rival and cognate principle, the basing of polyphonic designs upon a given melody to which one part (generally the tenor) was confined, proved scarcely less so. Nor were these two principles, the canon and the *canto fermo*, likely, by combination in their strictest forms, to produce better artistic results than separately. Both were rigid and mechanical principles; and their development into real artistic devices was due, not to a mere increase in the facility of their use, but to the fact that, just as the researches of alchemists led to the foundations of chemistry, so did the early musical puzzles lead to the discovery of innumerable harmonic and melodic resources which have that variety and freedom of interaction which can be organized into true works of art and can give the ancient mechanical devices themselves a genuine artistic character attainable by no other means.

The earliest canonic form is the *rondel* or *rota* as practised in the 12th century. It is, however, canonic by accident rather than in its original intention. It consists of a combination of short melodies in several voices, each melody being sung by each voice in turn. Now it is obvious that if one voice began alone, instead of all together, and if when it went on to the second melody the second voice entered with the first, and so on, the result would be a canon in the unison. Thus the difference between the crude counterpoint of the rondel and a strict canon in the unison is a mere question of the point at which the composition begins, and a 12th century rondel is simply a canon at the unison begun at the point where all the voices have already entered. There is some reason to believe that one kind of rondeau practised by Adam de la Hale was intended to be sung in the true canonic manner of the modern round; and the wonderful English rota, "Sumer is icumen in," shows in the upper four parts the true canonic method, and in its two-part *pes* the method in which the parts began together. In these archaic works the canonic form gives the whole a consistency and stability contrasting oddly with the dismal warfare between nascent harmonic principles and ancient anti-harmonic criteria which hopelessly wrecks them as regards euphony. As soon as harmony became established on a true artistic basis, the unaccompanied round took the position of a trivial but refined art-form, with hardly more expressive possibilities than the triolet in poetry, a form to which its brevity and lightness renders it fairly comparable. Orlando di Lasso's *Célébrons sans cesse* is a beautiful example of the 16th century round, which was at that time little cultivated by serious musicians. In more modern times the possibilities of the round in its purest form have enormously increased; and with the aid of elaborate instrumental accompaniments it plays an important feature in such portions of classical operatic *ensemble* as can with dramatic propriety be devoted to expressions of feeling uninterrupted by dramatic action. In the modern round the first voice can execute a long and complete

melody before the second voice joins in. Even if this melody be not instrumentally accompanied, it will imply a certain harmony, or at all events arouse curiosity as to what the harmony is to be. And the sequel may shed a new light upon the harmony, and thus by degrees the whole character of the melody may be transformed. The power of the modern round for humorous and subtle, or even profound, expression was first fully revealed by Mozart, whose astounding unaccompanied canons would be better known if he had not unfortunately set many of them to extemporized texts unfit for publication. The round or the *catch* (which is simply a specially jocose round) is a favourite English art-form, and the English specimens of it are probably more numerous and uniformly successful than those of any other nation. Still they cannot honestly be said to realize the full possibilities of the form. It is so easy to write a good piece of free and fairly contrapuntal harmony in three or more parts, and so arrange it that it remains correct when the parts are brought in one by one, that very few composers seem to have realized that any further artistic device was possible within such limits. Even Cherubini gives hardly more than a valuable hint that the round may be more than a *jeu d'esprit*; and, unless he be an adequate exception, the unaccompanied rounds of Mozart and Brahms stand alone as works that raise the round to the dignity of a serious art-form. With the addition of an orchestral accompaniment the round obviously becomes a larger thing; and when we consider such specimens as that in the finale of Mozart's *Cosi fan tutte*, the quartet in the last act of Cherubim's *Faniska*, the wonderfully subtle quartet "Mir ist so wunderbar" in Beethoven's *Fidelio*, and the very beautiful numbers in Schubert's masses where Schubert finds expression for his genuine contrapuntal feeling without incurring the risks resulting from his lack of training in fugue-form, we find that the length of the initial melody, the growing variety of the orchestral accompaniment and the finality and climax of the free coda, combine to give the whole a character closely analogous to that of a set of contrapuntal variations, such as the

slow movement of Haydn's "Emperor" string quartet, or the opening of the finale of Beethoven's 9th Symphony. Berlioz is fond of beginning his largest movements like a kind of round; *e.g.* his *Dies Irae*, and *Scène aux Champs*.

A moment's reflection will show that three conditions are necessary to make a canon into a round. First, the voices must imitate each other in the unison; secondly, they must enter at equal intervals of time; and thirdly, the whole melodic material must be as many times longer than the interval of time as the number of voices; otherwise, when the last voice has finished the first phrase, the first voice will not be ready to return to the beginning. Strict canon is, however, possible under innumerable other conditions, and even a round is possible with some of the voices at the interval of an octave, as is of course inevitable in writing for unequal voices. And in a round for unequal voices there is obviously a new means of effect in the fact that, as the melody rotates, its different parts change their pitch in relation to each other. The art by which this is possible without incorrectness is that of double, triple and multiple counterpoint (see COUNTERPOINT). Its difficulty is variable, and with an instrumental accompaniment there is none. In fugues, multiple counterpoint is one of the normal resources of music; and few devices are more self-explanatory to the ear than the process by which the subject and counter-subjects of a fugue change their positions, revealing fresh melodic and acoustic aspects of identical harmonic structure at every turn. This, however, is rendered possible and interesting by the fact that the passages in such counterpoint are separated by episodes and are free to appear in different keys. Many fugues of Bach are written throughout in multiple counterpoint; but the possibility of this, even to composers such as Bach and Mozart, to whom difficulties seem unknown, depends upon the freedom of the musical design which allows the composer to select the most effective permutations and combinations of his counterpoint, and also to put them into whatever key he chooses. An unaccompanied round for unequal

voices would bring about the permutations and combinations in a mechanical order; and unless the melody were restricted to a compass common to soprano and alto each alternate revolution would carry it beyond the bounds of one or the other group of voices. The technical difficulties of such a problem are destructive to artistic invention. But they do not appear in the above-mentioned operatic rounds, though these are for unequal voices, because here the length of the initial melody is so great that the composition is quite long enough before the last voice has got farther than the first or second phrase, and, moreover, the free instrumental accompaniment is capable of furnishing a bass to a mass of harmony otherwise incomplete.

The resources of canon, when emancipated from the principles of the round, are considerable when the canonic form is strictly maintained, and are inexhaustible when it is treated freely. A canon need not be in the unison; and when it is in some other interval the imitating voice alters the expression of the melody by transferring it to another part of the scale. Again, the imitating voice may follow the leader at any distance of time; and thus we have obviously a definite means of expression in the difference of closeness with which various canonic parts may enter, as, for instance, in the stretto of a fugue. Again, if the answering part enters on an unaccented beat where the leader began on the accent, there will be artistic value in the resulting difference of rhythmic expression. This is the device known as *per arsin et thesin*. All these devices are, in skilful hands, quite definite in their effect upon the ear, and their expressive power is undoubtedly due to their special canonic nature. The beauty of the pleading, rising sequences in crossing parts that we find in the canon in the 2nd at the opening of the *Recordare* in Mozart's *Requiem* is attainable by no other technical means. The close canon in the 6th at the distance of one minim in reversed accent in Bach's eighteenth *Goldberg* variation owes all its smooth harmonic expression to the fact that the two canonic parts move in sixths which

would be simultaneous but for the pause of the minim which reverses the accents of the upper part while it creates that chain of suspended discords which give harmonic variety to the whole.

Two other canonic devices have important artistic value, namely, *augmentation* and *diminution* (two different aspects of the same thing) and *inversion*. In augmentation the imitating part sings twice as slow as the leader, or sometimes still slower. This obviously should impart a new dignity to the melody, and in diminution the expression is generally that of an accession of liveliness.[1] Neither of these devices, however, continues to appeal to the ear if carried on for long. In augmentation the answering part lags so far behind the leader that the ear cannot long follow the connexion, while a diminished answer will obviously soon overtake the leader, and can proceed on the same plan only by itself becoming the leader of a canon in augmentation. Beethoven, in the fugues in his sonatas *op.* 106 and 110, adapted augmentation and diminution to modern varieties of thematic expression, by employing them in triple time, so that, by *doubling* the length of the original notes across this triple rhythm, they produce an entirely new rhythmic expression. This does not seem to have been applied by any earlier composer with the same consistency or intention.

The device of *inversion* consists in the imitating part reversing every interval of the leader, ascending where the leader descends and vice versa. Its expressive power depends upon such subtle matters of the harmonic expression of melody that its artistic use is one of the surest signs of the difference between classical and merely academic music. There are many melodies of which the inversion is as natural as the original form, and does not strikingly alter its character. Such are, for instance, the theme of Bach's *Kunst der Fuge*, most of Purcell's contrapuntal themes, the theme in the fugue of Beethoven's sonata, *op.* 110, and the eighth of Brahms's variations on a theme by Haydn. In such cases inversion sometimes produces

harmonic variety as well as a sense of melodic identity in difference. But where a melody has marked features of rise and fall, such as long scale passages or bold skips, the inversion, if productive of good harmonic structure and expression, may be a powerful method of transformation. This is admirably shown in the twelfth of Bach's *Goldberg Variations*, in the fifteenth fugue of the first book of his *Forty-eight Preludes and Fugues*, in the finale of Beethoven's sonata, *op.* 106, and in the second subjects of the first and last movements of Brahms's clarinet trio.

The only remaining canonic device which figures in classical music is that known as *cancrizans*, in which the imitating part reproduces the leader backwards. It is of extreme rarity in serious music; and, though it sometimes happens by accident that a melody or figure of uniform rhythm will produce something equally natural when read backwards, there is only one example of its use that appeals to the ear as well as the eye. This is to be found in the finale of Beethoven's sonata, *op.* 106, where it is applied to a theme with such sharply contrasted rhythmic and melodic features that with long familiarity a listener would probably feel not only the wayward humour of the passage in itself, but also its connexion with the main theme. Nevertheless, the prominence given to the device in technical treatises, and the fact that this is the one illustration which hardly any of them cite, show too clearly the way in which music is treated not only as a dead language but as if it had never been alive.

All these devices are also independent of the canonic idea, since they are so many methods of transforming themes in themselves and need not always be used in contrapuntal combination.

2. Fugue.

As the composers of the 16th century made progress in harmonic and contrapuntal expression through the discipline of strict canonic forms, it became increasingly evident that there was no necessity for the maintenance of strict canon throughout a composition. On the contrary, the very variety of canonic possibilities, apart from the artistic necessity of breaking up the uniform fulness of harmony, suggested the desirability of changing one kind of canon for another, and even of contrasting canonic texture with that of plain masses of non-polyphonic harmony. The result is best known in the polyphonic 16th-century motets. In these the essentials of canonic effect are embodied in the entry of one voice after another with a definite theme stated by each voice in that part of the scale which best suits its compass, thus producing a free canon for as many parts as there are voices, in alternate intervals of the 4th, 5th and octave, and at such distances of time as are conducive to clearness and variety of proportion. It is not necessary for the later voices to imitate more than the opening phrase of the earlier, or, if they do imitate its continuation, to keep to the same interval.

Such a texture differs in no way from that of the fugue of more modern times. But the form is not what is now understood as fugue, inasmuch as 16th-century composers did not normally think of writing long movements on one theme or of making a point of the return of a theme after episodes. With the appearance of new words in the text, the 16th-century composer naturally took up a new theme without troubling to design it for contrapuntal combination with the opening; and the form resulting from this treatment of words was faithfully reproduced in the instrumental *ricercari* of the time. Occasionally, however, breadth of treatment and terseness of design combined to produce a short movement on one idea indistinguishable in form from a *fughetta* of Bach; as in the *Kyrie* of Palestrina's Mass, *Salve Regina*.

But in Bach's art the preservation of a main theme is more necessary the longer the composition; and Bach has an incalculable number of methods of giving his fugues a symmetry of form and balance of climax so subtle and perfect that we are apt to forget that the only technical rules of a fugue are those which refer to its texture. In the *Kunst der Fuge* Bach has shown with the utmost clearness how in his opinion the various types of fugue may be classified. That extraordinary work is a series of fugues, all on the same subject. The earlier fugues show how an artistic design may be made by simply passing the subject from one voice to another in orderly succession (in the first example without any change of key except from tonic to dominant). The next stage of organization is that in which the subject is combined with inversions, augmentations and diminutions of itself. Fugues of this kind can be conveniently called stretto-fugues.[2] The third and highest stage is that in which the fugue combines its subject with contrasted counter-subjects, and thus depends upon the resources of double, triple and quadruple counterpoint. But of the art by which the episodes are contrasted, connected climaxes attained, and keys and subtle rhythmic proportions so balanced as to give the true fugue-forms a beauty and stability second only to those of the true sonata forms, Bach's classification gives us no direct hint. A comparison of the fugues in the *Kunst der Fuge* with those elsewhere in his works reveals a necessary relation between the nature of the fugue-subject and the type of fugue. In *Kunst der Fuge* Bach has obvious didactic reasons for taking the same subject throughout; and, as he wishes to show the extremes of technical possibility, that subject must necessarily be plastic rather than characteristic. Elsewhere Bach prefers very lively or highly characteristic themes as subjects for the simplest kind of instrumental fugue. On the other hand, there comes a point when the mechanical strictness of treatment crowds out the proper development of musical ideas; and the 7th fugue (which is one solid mass of stretto in augmentation, diminution and inversion) and the 12th and 13th (which are

invertible bodily) are academic exercises outside the range of free artistic work. On the other hand, the less complicated stretto-fugues and the fugues in double and triple counterpoint are perfect works of art and as beautiful as any that Bach wrote without didactic purpose.

Fugue is still, as in the 16th century, a texture rather than a form; and the rules given in most technical treatises for its general shape are based, not on the practice of the great composers, but on the necessities of beginners, whom it would be as absurd to ask to write a fugue without giving them a form as to ask a schoolboy to write so many pages of Latin verses without a subject. But this standard form, whatever its merits may be in combining progressive technique with musical sense, has no connexion with the true classical types of fugue, though it played an interesting part in the renaissance of polyphony during the growth of the sonata style, and even gave rise to valuable works of art (*e.g.* the fugues in Haydn's quartets, *op.* 20). One of its rules was that every fugue should have a stretto. This rule, like most of the others, is absolutely without classical warrant; for in Bach the ideas of stretto and of counter-subject almost exclude one another except in the very largest fugues, such as the 22nd in the second book of the Forty-eight; while Handel's fugue-writing is a masterly method, adopted as occasion requires, and with a lordly disdain for recognized devices. But the pedagogic rule proved to be not without artistic point in more modern music; for fugue became, since the rise of the sonata-form, for some generations a contrast with the normal means of expression instead of being itself normal. And while this was so, there was considerable point in using every possible means to enhance the rhetorical force of its peculiar devices, as is shown by the astonishing modern fugues in Beethoven's last works. Nowadays, however, polyphony is universally recognized as a permanent type of musical texture, and there is no longer any reason why if it crystallizes into the fugue-form at all it should not adopt the classical rather than the pedagogic type.

It is still an unsatisfied wish of accurate musicians that the term fugue should be used to imply rather a certain type of polyphonic texture than the whole form of a composition. At present one runs the risk of grotesque misconceptions when one quite rightly describes as "written in fugue" such passages as the first subjects in Mozart's *Zauberflöte* overture, the andantes of Beethoven's first symphony and C minor quartet, or the first and second subjects of the finale of Mozart's G major quartet, the second subject of the finale of his D major quintet, and the exposition of quintuple counterpoint in the coda of the finale of the *Jupiter Symphony*, and countless other passages in the developments and main subjects of classical and modern works in sonata form. The ordinary use of the term implies an adherence to a definite set of rules quite incompatible with the sonata style, and therefore inapplicable to these passages, and at the same time equally devoid of real connexion with the idea of fugue as understood by the great masters of the 16th century who matured it. In the musical articles in this Encyclopaedia we shall therefore speak of writing "in fugue" as we would speak of a poet writing in verse, rather than weaken our descriptions by the orthodox epithet of "loose *fugato*."

3. Counterpoint on a Canto Fermo.

The early practice of building polyphonic designs on a voice-part confined to a given plain-song or popular melody furnishes the origin for every contrapuntal principle that is not canonic, and soon develops into a canonic principle in itself. When the *canto fermo* is in notes of equal length and is sung without intermission, it is of course as rigid a mechanical device as an acrostic. Yet it may have artistic value in furnishing a steady rhythm in contrast to suitable free motion in the other parts. When it is in the bass, as in Orlando di Lasso's six-part *Regina Coeli*, it is apt to cramp the harmony; but when it is in the tenor (its normal place in 16th-century

music), or any other part, it determines little but the length of the composition. It may or may not appeal to the ear; if not, it at least does no harm, for its restricting influence on the harmony is small if its pace is slower than that of its surroundings. If, on the other hand, its melody is characteristic, or can be enforced by repetition, it may become a powerful means of effect, as in the splendid close of Fayrfax's Mass *Albanus* quoted by Professor Wooldridge on page 320 in the second volume of the *Oxford History of Music*. Here the tenor part ought to be sung by a body of voices that can be distinctly heard through the glowing superincumbent harmony; and then the effect of its five steps of sequence in a melodious figure of nine semibreves will reveal itself as the principle which gives the passage consistency of drift and finality of climax.

When the rhythm of the *canto fermo* is not uniform, or when pauses intervene between its phrases, whether these are different figures or repetitions of one figure in different parts of the scale, the device passes into the region of free art, and an early example of its simplest use is described in the article MUSIC as it appears in Josquin's wonderful *Miserere*. Orlando di Lasso's work is full of instances of it, one of the most dramatic of which is the motet *Fremuit spiritu Jesus* (*Magnum Opus* No. 553 [378]), in which, while the other voices sing the scripture narrative of the death and raising of Lazarus, the tenor is heard singing to an admirably appropriate theme the words, *Lazare, veni foras*. When the end of the narrative is reached, these words fall into their place and are of course taken up in a magnificent climax by the whole chorus.

The free use of phrases of *canto fermo* in contrapuntal texture, whether confined to one part or taken up in fugue by all, constitutes the whole fabric of 16th-century music; except where polyphonic device is dispensed with altogether, as in Palestrina's two settings of the *Stabat Mater*, his *Litanies*, and all of his later *Lamentations* except the initials. A 16th-century mass,

when it is not derived in this way from those secular melodies to which the council of Trent objected, is so closely connected with Gregorian tones, or at least with the themes of some motet appropriate to the holy day for which it was written, that in a Roman Catholic cathedral service the polyphonic music of the best period co-operates with the Gregorian intonations to produce a consistent musical whole with a thematic coherence almost suggestive of Wagnerian *Leitmotif*. In later times the Protestant music of Germany attained a similar consistency, under more complicated musical conditions, by the use of chorale-tunes; and in Bach's hands the fugal and other treatment of chorale-melody is one of the most varied and expressive of artistic resources. It seems to be less generally known that the chorale plays a considerable though not systematic part in Handel's English works. The passage "the kingdoms of the world" in the "Hallelujah Chorus" (down to "and He shall live for ever and ever") is a magnificent development of the second part of the chorale *Wachet auf* ("Christians wake, a voice is calling"); and it would be easy to trace a German or Roman origin for many of the solemn phrases in long notes which in Handel's choruses so often accompany quicker themes.

From the use of an old *canto fermo* to the invention of an original one is obviously a small step; and as there is no limit to the possibilities of varying the *canto fermo*, both in the part which most emphatically propounds it and in the imitating or contrasted parts, so there is no line of demarcation between the free development of counterpoint on a *canto fermo* and the general art of combining melodies which gives harmony its deepest expression and musical texture its liveliest action. Nor is there any such line to separate polyphonic from non-polyphonic methods of accompanying melody; and Bach's *Orgelbüchlein* and Brahms's posthumous organ-chorales show every conceivable gradation between plain harmony or arpeggio and the most complex canon.

In Wagnerian polyphony canonic devices are rare except in such simple moments of anticipation or of communion with nature as we have before the rise of the curtain in the *Rheingold* and at the daybreak in the second act of the *Götterdämmerung*. On the other hand, the art of combining contrasted themes crowds almost every other kind of musical texture (except tremolos and similar simple means of emotional expression) into the background, and is itself so transformed by new harmonic resources, many of which are Wagner's own discovery, that it may almost be said to constitute a new form of art. The influence of this upon instrumental music is as yet helpful only in those new forms which are breaking away from the limits of the sonata style; and it is impossible at present to sift the essential from the unessential in that marvellous compound of canonic device, Wagnerian harmony, original technique and total disregard of every known principle of musical grammar, which renders the work of Richard Strauss the most remarkable musical phenomenon of recent years. All that is certain is that the two elements in which the music of the future will finally place its main organizing principles are not those of instrumentation and external expression, on which popular interest and controversy are at present centred, but rhythmic flow and counterpoint. These have always been the elements which suffered from neglect or anarchy in earlier transition-periods, and they have always been the elements that gave rationality to the new art to which the transitions led.

(D. F. T.)

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1 But see the E. major fugue in the second book of the *Wohltemperirtes Klavier*, where the entry of the diminished subject (in a new position of the scale) is very tender and solemn.

2 For technical terms see articles COUNTERPOINT and FUGUE.

CONTREXÉVILLE, a watering-place of north-eastern France, in the department of Vosges, on the Vair, 39 m. W. of Épinal by rail. Pop. (1906) 940. The mineral springs of Contrexéville have been in local repute since a remote period, but became generally known only towards the end of the 18th century; and the modern reputation of the place as a health resort dates from 1864, when it began to be developed by a company, the Société des Eaux de Contrexéville, and more particularly from about 1895. In the ten years after this latter date many improvements were made for the accommodation of visitors, for whom the season is from May to September. The waters of the Source Pavilion, which are used chiefly for drinking, have a temperature of 53° F. and are characterized chiefly by the presence of calcium sulphate. They are particularly efficacious in the treatment of gravel and kindred disorders, by the elimination of uric acid.

See *Thirty-five years at Contrexéville* (1903), by Dr Debout d'Estrées.

CONTROL (Fr. *contrôle*, older form *contre rolle*, from Med. Lat. *contra-rotulus*, a counter roll or copy of a document used to check the original; there is no instance in English of the use of "control" in this, its literal, meaning), a substantive (whence the verb) for that which checks or regulates anything, and so especially command of body or mind by the will, and generally the power of regulation. In England the "Board of Control," abolished in 1858, was the body which supervised the East India Company in the administration of India. In the case of "controller," a general term for a public official who checks expenditure, the more usual form "comptroller" is a wrong spelling due to a false connexion with "accompt"

or “account.” A “control” or “control-experiment,” in science, is an experiment used, by an application of the method of difference, to check the inferences drawn from another experiment.

CONTUMACY (Lat. *contumacia*, obstinacy; derived from the root *tem-*, as in *temnere*, to despise, or possibly from the root *tum-*, as in *tumere*, to swell, with anger, &c.), a stubborn refusal to obey authority, obstinate resistance; particularly, in law, the wilful contempt of the order or summons of a court (see CONTEMPT OF COURT). In ecclesiastical law, the contempt of the authority of an ecclesiastical court is dealt with by the issue of a writ *de contumace capiendo* from the court of chancery at the instance of the judge of the ecclesiastical court; this writ took the place of that *de excommunicato capiendo* in 1813, by an act of George III. c. 127 (see EXCOMMUNICATION).

CONUNDRUM (a word of unknown origin, probably coined in burlesque imitation of scholastic Latin, as “hocus-pocus” or “panjandrum”), originally a term meaning whim, fancy or ridiculous idea; later applied to a pun or play upon words, and thus, in its usual sense, to a particular form of riddle in which the answer depends on a pun. In a transferred sense the word is also used of any puzzling question or difficulty.

CONVENT (Lat. *conventus*, from *convenire*, to come together), a term applied to an association of persons secluded from the world and devoted to a religious life, and hence to the building in which they live, a monastery or (more particularly) nunnery. The diminution “conventicle” (*conventiculum*), generally used in a contemptuous sense as implying sectarianism, secrecy or illegality, is applied to the meetings or meeting-places of religious or other dissenting bodies.

CONVENTION (Lat. *conventio*, an assembly or agreement, from *convenire*, to come together), a meeting or assembly; an agreement between parties; a general agreement on which is based some custom, institution, rule of behaviour or taste, or canon of art; hence extended to the abuse of such an agreement, whereby the rules based upon it become lifeless and artificial. The word is of some interest historically and politically. It is used of an assembly of the representatives of a nation, state or party, and is particularly contrasted with the formal meetings of a legislature. It is thus applied to those parliaments in English history which, owing to the abeyance of the crown, have assembled without the formal summons of the sovereign; in 1660 a convention parliament restored Charles II. to the throne, and in 1689 the Houses of Commons and Lords were summoned informally to a convention by William, prince of Orange, as were the

Estates of Scotland, and declared the throne abdicated by James II. and settled the disposition of the realm. Similarly, the assembly which ruled France from September 1792 to October 1795 was known as the National Convention (see below); the statutory assembly of delegates which framed the constitution of the United States of America in 1787 was called the Constitutional Convention; and the various American state constitutions have been drafted and sometimes revised by constitutional ...

(*Continued in volume 7, slice 3, page 46.*)

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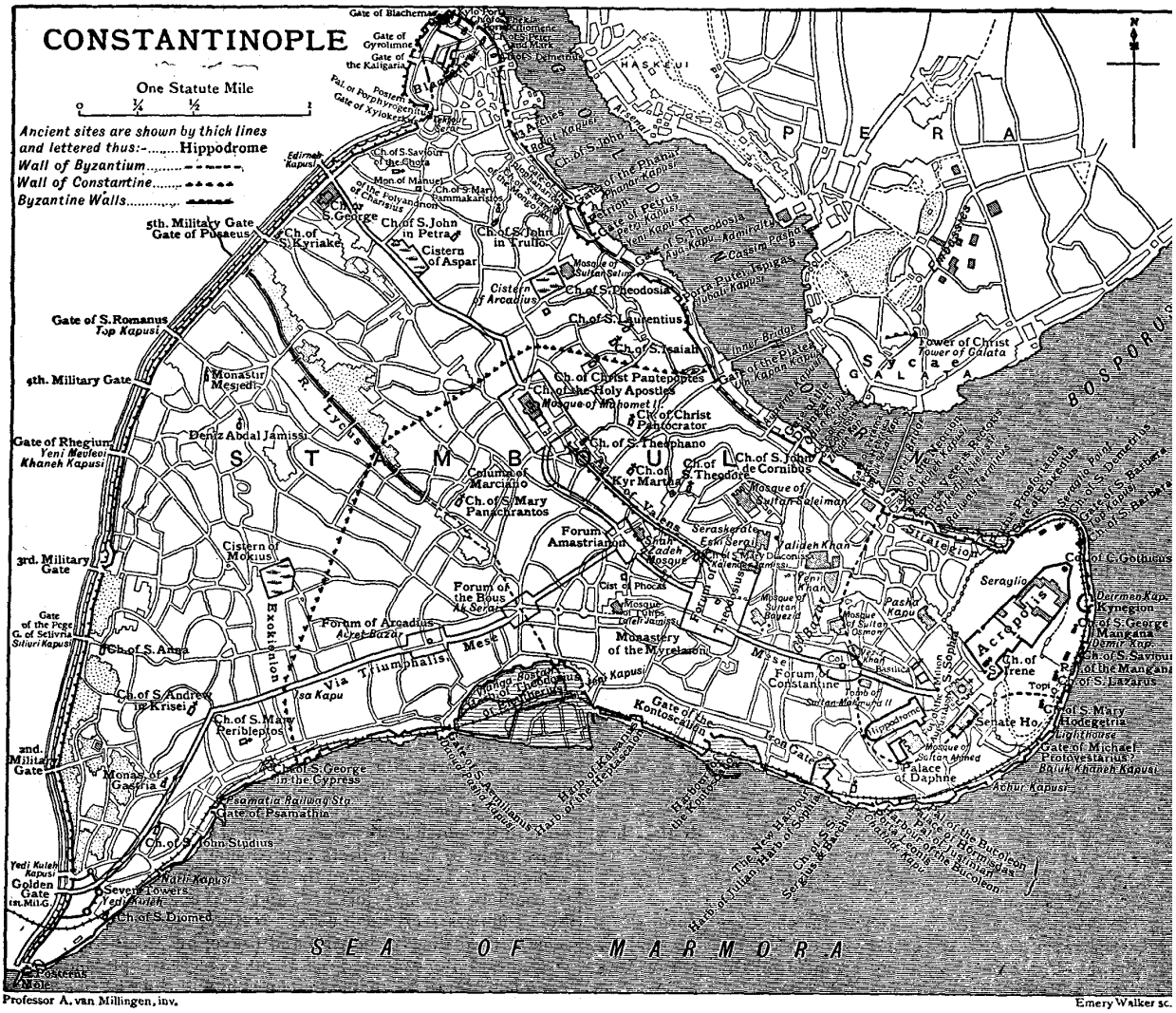
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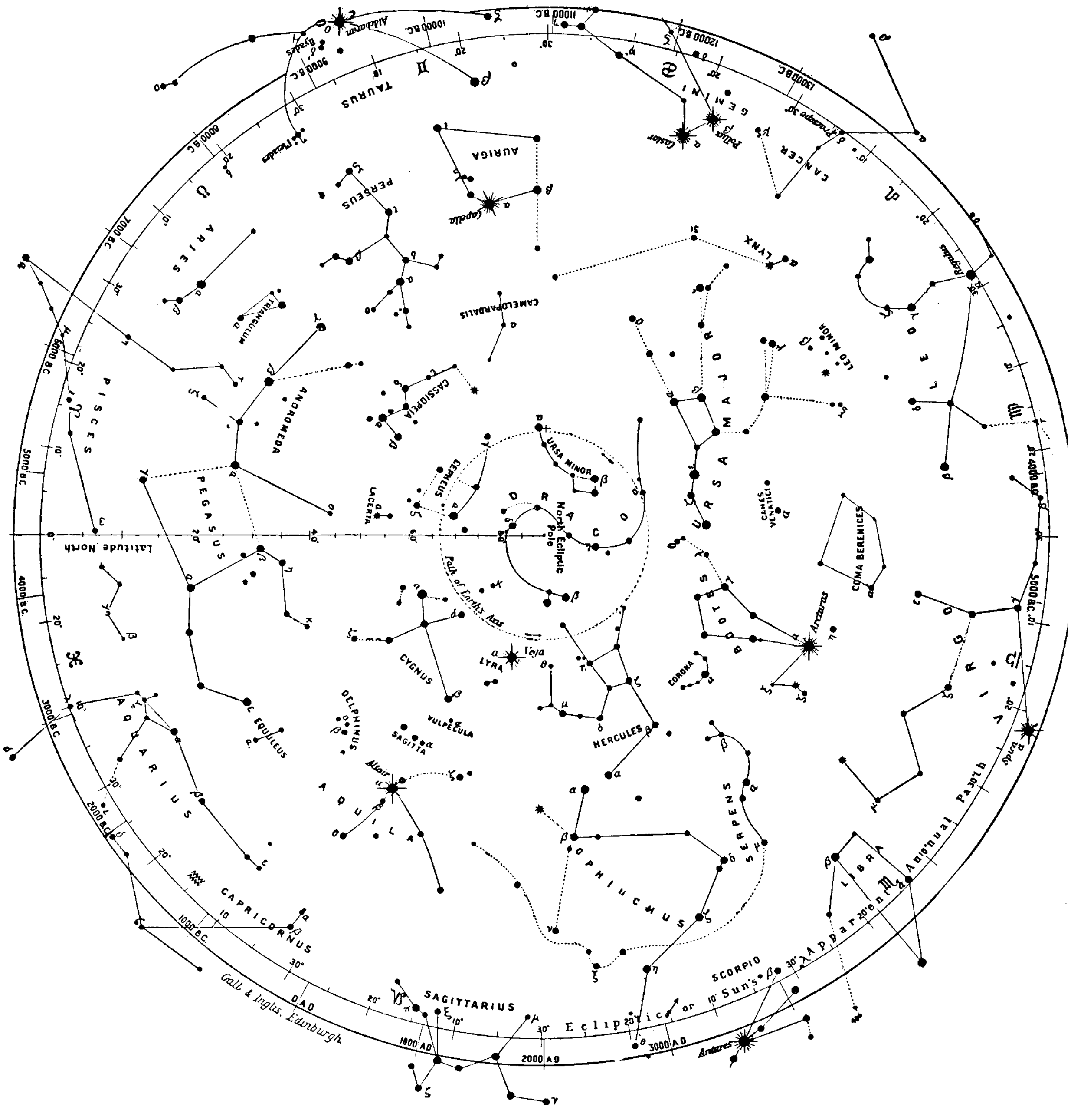

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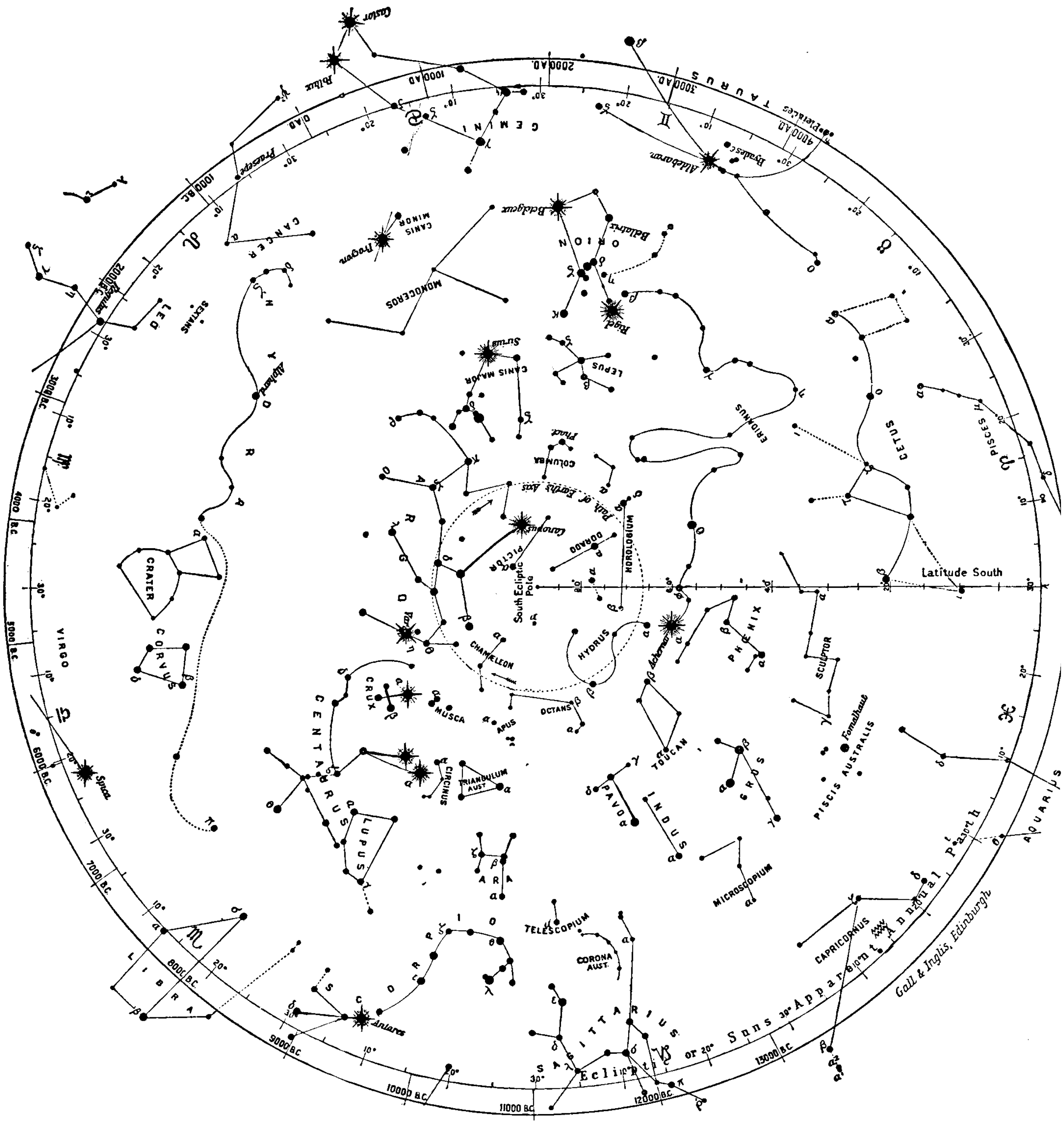

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