

miles N.W. of Simpheropol, on a sandy promontory in the north of Kalamita Bay, in 45° 12' N. lat. and 33° 5' E. long. Of its numerous ecclesiastical buildings, which comprise 16 mosques, three synagogues, an Armenian, an Orthodox, and a Catholic church, only two are of special interest, the Karaite synagogue and one of the mosques, which has fourteen cupolas, and is built after the plan of St Sophia in Constantinople. The shipping accommodation is poor, the port or rather roadstead having a sandy bottom, and being exposed to violent storms from the N.E. Small vessels cast anchor near the town in a depth of 18 or 15 feet. The trade is principally in grain, skins, cowhair, felt, tallow, and salt. In 1861, out of a population of 7081, 3422 were Mahometans, 1228 Karaite Jews, and 175 Talmudists. In 1871 the total was 8294.

It is believed that in the 5th century B.C. there was a town Coronitis, in this part of the Chersonese, and according to some authorities it was near this spot that a military post called Eupatorium was established in the 1st century A.D. by Diophantes, the general of Mithradates Eupator. About the end of the 15th century the Tatars built the fortress of Gezelevé on the present site, and it became the centre of one of the principal towns of the Crimea. It was occupied for the first time by the Russians under Marshal Munich in 1786, and for the second time in 1771 by Prince Dolgoroukoff. Its annexation to Russia took place in 1783, and in the following year it was made the chief town of a circle. In 1854 the Anglo-French troops were landed at Eupatoria, and in February 1855 the town was occupied by the Turkish forces under Omer Pasha.

EUPEN (French *Néau*), the chief town of a circle in the district of Aix-la-Chapelle, Rhenish province of Prussia, is situated in a beautiful valley at the confluence of the Hill and Vesdre, on the Rhenish railway, 9 miles south of Aix-la-Chapelle. It is a flourishing commercial town, and besides cloth and buckskin mills, it has net and glove manufactories, soapworks, dyeworks, tanneries, and breweries, and also carries on a considerable trade in cattle, butter, and cheese. It has a Protestant and 6 Catholic churches, a Franciscan monastery, a town school of a high grade, an orphanage, a hospital, an infirmary, and a lunatic asylum. Eupen until 1801 was under the government of Austria, and belonged to the duchy of Limburg, but at the peace of Lunéville it came into the possession of France, and in 1814 into that of Prussia. The population in 1875 was 14,895.

EUPHORBIVM, an acrid dull-yellow or brown resin, consisting of the concreted milky juice of *Euphorbia resinifera*, Berg., a cactus-like perennial plant of the natural order Euphorbiaceæ, indigenous to Morocco. It is procured by making incisions in the branches of the plant, and allowing the juice to harden in the heat of the sun. In collecting it, the protection of the mouth and nostrils by a cloth is requisite, as the dust occasions violent sneezing if inhaled. Euphorbium has a taste at first little marked, but afterwards hot and acrid. It dissolves in alcohol, ether, and turpentine; in water it is only slightly soluble. Its constituents, according to Flückiger, are 38 per cent. of an amorphous resin, to which the drug owes its acidity, and 22 per cent. of *euphorbon*,—together with mucilage, malates, and mineral compounds. Pliny states that the name of the drug was given to it in honour of Euphorbus, the physician of Juba II., king of Mauritania. In former times euphorbium was valued in medicine for its drastic, purgative, and emetic properties; and as an errhine it is still occasionally resorted to. On account of the violence of its action, it requires to be mixed for use with starch or flour. As a vesicant it has been employed as a substitute for cantharides in veterinary practice.

See Flückiger and Hanbury, *Pharmacographia*, 1874; Dentley and Trimmen, *Medical Plants*, tab. 240.

EUPHORION, a Greek poet and grammarian, was the son of Polymnetus, and was born at Chalcis in Eubœa in the 126th Olympiad, 274 B.C. He studied philosophy under

Lacydes and Prytanis, and poetry under Archebulus the Theraean. After amassing great wealth, he retired (221 B.C.) to the court of Syria, and there assisted Antiochus the Great in forming the royal library at Antioch, which it was intended should rival that of Alexandria; and in this employment he died probably about 200 B.C. His poetry was principally epic, but he was also an epigrammatist, and has besides been supposed, though without sufficient reason, to have written dramas. Only a few fragments of his works have been preserved; but from the opinions expressed by ancient writers, it appears that he was constantly in search of archaic and obsolete expressions, and that the erudite character of his allusions rendered him so obscure as to be understood with difficulty. His works appear to have been popular as late as the times of the emperor Tiberius.

The fragments have been edited by Meineke under the title *De Euphorionis Chalcedensis Vita et Scriptis*, &c., Dantzig, 1823. This work with amendments has been published by Meineke in his *Analecta Alexandrina*, Berlin, 1843. See also Clinton's *Fasti Hellenici*, vol. ii. p. 511; Fabricius, *Bib. Græc.*, vol. i. p. 594; Heyne, *De Euphorione*, *Excurs. iii. ad Virg. Bucol. and Excurs. v. ad Æn. ii.*

EUPHRANOR, a painter and statuary of Greece, who flourished about the middle of the 4th century B.C., was born in the territory of Corinth, but, having practised his art and acquired his renown at Athens, is always identified with the Athenian school. In sculpture he produced a great number of pieces, from colossal life-figures to drinking cups. Of the finest of these, a figure of Paris, a beautiful copy now exists in the Museo Pio-Clementino in the Vatican. His principal pictorial work was extant in the time of Pausanias in one of the porches of the Ceramicus. It represented on one side of the wall the twelve gods, and on the other Theseus as the founder of the equal polity of Athens. Among the pupils of Euphranor were Antidotus, Carmanides, and Leonidas of Anthedon. He was the author of some works on colour and proportion, which seem to have been the characteristic excellences of his own pieces.

EUPHRATES. The Euphrates has been one of the best known rivers of the world from the remotest antiquity. It may be considered, roughly speaking, as divided into three portions, the upper, middle, and lower divisions, each of which is distinguished by special physical features, and each of which has played a conspicuous part in the world's history, retaining to the present day monumental evidence of the races who have lined its banks. The upper division is formed of two arms, called respectively the Frát<sup>1</sup> and the Murád (different forms in all probability of the same name), which rise, the one a short distance to the N.E. of Erzeroum, and the other to the N.W. of Lake Van near Diyadin, and which unite in the vicinity of Keban Maaden, about 39° N. lat. and 39° E. long, on the high road conducting from Sivas to Diarbekir. This upper division of the river bisects the plateau of Asia Minor, and has thus been traversed by all the nations who have passed successively from Asia into eastern Europe. It still exhibits at Paloo, at Malatich, and in some other places, on the precipitous rocks which form its banks, cuneiform inscriptions of the Scytho-Arian dynasty, which ruled in Armenia in the 8th century B.C. Here the general

<sup>1</sup>The original name of the Euphrates, *Burat* or *Purat*, represents probably a very old Asiatic root, *Bur* or *Pur* (corresponding with the Welsh *Bwro* and English "pour"), with a Semitic feminine ending. The full form of *Hufrat*, whence the Gr. *Εὐφράτης*, is first found in the inscriptions of Darius Hystaspes, the initial syllable having been prefixed apparently by the Persians, in order to obtain a suitable Arian etymology for the name *Hufrat*, signifying "the good abounding." The fluvial root *Bur* is perhaps to be recognized in Borysthene's *Kha-bur*, and some other names.

character of the Euphrates is that of a river of the first order struggling through high hills or rather low mountains, prolongations of the chain of Anti-Taurus, and making an exceedingly tortuous course as it forces its way over a rocky or a pebbly bed from one natural barrier to another. As it winds round its numerous barriers it carries occasionally towards each of the cardinal points a considerable body of water and is shallow enough in some places for loaded camels to pass in autumn, the water rising to about 4½ feet. The general direction of the left arm of the Euphrates, which is termed the Murád-châi, and which, rising near Diyadin, skirts the plains both of Mûsh and Kharpût, is westerly as far as its junction with the right arm near Keban Maaden. This right arm again, which rises near Erzeroum, and which, though of inferior length and size, is generally regarded as the true Euphrates, runs south-westerly by Erzingân Kamakh (*Kumukh* of the inscriptions, and Gr. *Κομμαγγνή*) and Egin to the point of junction. There, however, the direction of the river changes. Meeting obliquely the Anti-Taurus, which afterwards rises into the Jûjik-dagh (the Mount Abus of antiquity), it is forced to the south through some very precipitous gorges to the vicinity of Malatich. It then crosses the broken country between the Anti-Taurus and Taurus, and finally forces its way through the latter range in a succession of rapids and cataracts for a space of about 40 miles, till it emerges upon the great Syrian plain, a short distance above Samsât, the ancient Samosata, where Lucian dwelt and wrote. The Euphrates now enters on its middle division, which may be considered to extend from Samsât to Hft. The direction here is at first S.W., then S., and afterwards S.E. from about the 36th parallel of latitude to its embouchure in the Persian Gulf. The river in this part of its course runs through a valley of a few miles in width, which it has eroded in the rocky surface, and which, being more or less covered with alluvial soil, is pretty generally cultivated by artificial irrigation. The method of irrigation is peculiar, dams of solid masonry being run into the bed of the river, frequently from both sides at once, so as to raise the level of the stream and thus to give a water power of several feet in height which is used to turn a gigantic wheel sometimes 40 feet in diameter. The water is thus raised to a trough at the top of the dam, and from thence is distributed among the gardens, and melon beds, and rice fields, occupying the valley between the immediate bed of the river and the rocky banks which shut it out from the desert. The wheels, which are of the most primitive construction, being made of rough branches of trees, with 100 or 150 rude clay vessels slung on the outer edge, raise a prodigious amount of water, and are moreover exceedingly picturesque, the dams or aqueducts to which they are attached being often formed of a series of well-built Gothic arches; but they are great impediments to navigation, as they cause a current of six or seven knots an hour, which cannot be surmounted by any ordinary steam power. In some parts of the river 300 of these wheels have been counted within a space of 130 miles, and when our steamers first appeared upon the river, not forty years ago, at least one-third of the wheels were in working order; but they have since fallen very generally into ruin, the Arab population, which used to cultivate the immediate banks of the river, having for the most part moved further off into the desert. The rocks which form the river banks during this part of its course are composed of gypsum, sandstone, and conglomerate with mica and felspar, and at some points, as at Helebi-Jelebi (the Zabâ and Zalâ of the Arabs) approach close to the water's edge. Beyond the rocky banks on both sides is the open desert, covered in spring with a luxuriant verdure, and dotted here and there with the black tent of the Bedouin, the great tribe of Shamar hold-

ing the left bank or Jeziréh, as the 'Anezeh possess the right bank or Shâmiyeh. The middle course of the Euphrates has also played a great part in history. In very early times it formed a boundary between the empire of Assyria to the east and the great nation of the Khetta, or Hittites, to the west; and the capital of the latter people, known in Scripture as Carchemish (2 Chron xxxv. 20), was built upon its banks. The ruins of this city, now known as Yerâbolus, a corruption of the Greek Hierapolis, have been recently examined by Mr George Smith, and are found to contain numerous well-preserved bas-reliefs (with inscriptions in the Hamathite character), which promise to be of the utmost importance as forming the connecting link that has been long sought between Egyptian and Assyrian art. In the vicinity of Hierapolis, or Carchemish, was the upper passage of the Euphrates on the road conducting from Syria to Nineveh. The site is now known as Bir or Birejek, but it retained the title of Zugma (Greek, *Ζύγμα*), according to the Arab geographers, to comparatively modern times (see Yacût in voce), and the remains of the old bridge were still to be seen there in the 7th century of the Hegira, popularly known as the *Jisr Membij*, or bridge of Membij, the Arabic form of the Syriac Mabog or Hieropolis. The lower passage of the Euphrates conducting from Syria to Babylonia, which retained, among the Greeks, the old Semitic title of Thapsacus (or תפסאס 1 Kings v. 4, &c.), is usually placed at Der, 200 miles lower down the river; but Captain Lynch, who carefully examined the country, would prefer the position of *Phunsah* above Racca, where he found the remains of an ancient bridge. The Euphrates is singularly deficient in tributaries after it leaves the mountains; with the exception, indeed, of the *Sanjeh* (*Σίγγας* of the Greeks) and the *Sajur* (Sangar of the Assyrian inscriptions) on the right bank, and the *Bilikh* and *Khabûr* on the left, which have retained their present names unchanged for thirty centuries, there is no affluent to the Euphrates of any consequence after it has once broken through the Taurus range. In antiquity, indeed, there would seem to have been a river named Araxes by Xenophon, and Saocoras by Ptolemy, which descended from the Sinjar hills, and, running due south, joined the Euphrates between Der and Annah; but no traces of such a stream are now to be found, and it has been suggested therefore that its disappearance may be due to the same upheaval of the land at the south-eastern foot of the Sinjar hills, which diverted the Nisibin river (Gozan of scripture, Mygdonius of the Greeks, and Hermas of the Arabs) from its ancient course by Hatra to Tekrit on the Tigris, and forced it to join the Khabûr and ultimately the Euphrates.

During the Mahometan period there were many flourishing towns on the banks of the river in the middle part of its course. The geographers mention in succession Someisât, Rûm-Kaleh, Jisr-Mambej or Bir, Beles, El Ja'aber (or Dugar), Racca (Nicephorium at the mouth of the Bilikh), Kerkesseh (Circessium at the mouth of the Khabûr), Rahbeh, Dér-el-Kâim (Gordian's tomb? and the boundary between the Roman and Persian empires), Annah (or Anatho), Haditheh, Alûs, Nâûsel, and Hft. Many of these cities are now in ruins, but the sites can for the most part be identified, and they would all well repay a careful examination; at present the most considerable towns are Samsât, Bir, Annah, and Hft. From Bir to Ja'aber the river is rather sluggish, running over a sandy or pebbly bed; further down, and as far as Hft, the general character of the bed is rocky, and between Annah and Hft, it is thickly studded with islands, on which were built in former times the castles and treasures of the rulers of the land, many of these islands being still inhabited.

Hit,<sup>1</sup> which may be fixed on as the point of demarcation between the middle and lower divisions of the river, stands at the head of the alluvial deposit. It is distant about 750 miles by the windings of the river from the point where the Euphrates breaks through the Taurus range, and the further course of the stream measures about 550 miles to the sea. The hills and cliffs and rocky banks which have hitherto lined the river disappear, and, with the exception of one limited tract a short distance above Babylon, named El Haswa, there is not a stone or a pebble to be seen on the surface of the desert all the way to the sea. In the immediate vicinity of Hit a large canal was taken off on the right bank of the river, which followed the extreme skirt of the alluvium the whole way to the Persian Gulf, and thus formed an outer barrier, strengthened at intervals with watch-towers and fortified posts, to protect the cultivated land of the Sowád against the incursions of the desert Arabs. This gigantic work, the line of which is still to be traced throughout its course, was formerly called the *Khandak-Sabár*, or "Sapor's trench," being historically ascribed to the Sassanian king, Shapur Dhulaktáf, but it is known in the country as the Cherra-Safdeh, and is in popular tradition believed to have been excavated by Bokhtunash (Nebuchadnezzar) for his favourite "sultáne," Safdeh, "the fortunate." The great irrigating canals, however, which especially distinguished Babylonia, were derived from the left bank of the river, and watered the country between the Euphrates and the Tigris. Many of them must have been of the most remote antiquity, as the majority of the primitive capitals—such as Kuthá, and Niffer, and Larsa, &c., sister cities of Babylon—were built upon their banks, and are thus proved to be of a later date than the canals. In the time of the Arabs the chief canals were the Nahr Isá, the Nahr Sarsar, the Nahr Malcá (the royal river of the Greeks), and the Nahr Kuthá, and the cuts from these main channels, reticulating the entire country between the rivers, converted it into a continuous and luxuriant garden. The most important canal, however, was the large stream which left the Babylonian branch of the Euphrates just above the city, and under the name of the *Arakhat*<sup>2</sup> (Archos of the Greeks and *Serrát* and *Nil* of the Arabs) ran due east to the Tigris, irrigating all the central part of the Jezreth, and sending down a branch as far south as Niffer. At the present day it is easy to distinguish these great primitive water courses from the lateral ducts which they fed, the former being almost without banks, and merely traceable by the winding curves of the layers of alluvium in the bed, while the latter are hedged in by high banks of mud, heaped up during centuries of dredging. Not a hundredth part of the old irrigation system is now in working order. A few of the mouths of the smaller canals are kept open so as to receive a limited supply of water at the rise of the river in May, which then distributes itself over the lower lying lands in the interior, almost without labour on the part of the cultivators, giving birth in such localities

<sup>1</sup> The true name of this place seems to have been *Thi*, which is often found in the Talmud in the compound form of *Thi-da-kira*, or "*Thi* of the Bitumen," from the famous bituminous springs in the vicinity. Herodotus wrote the name as *Thi*, with the Greek nominative ending, while in *Hit* we have the Arabic feminine suffix. Isidore gives the form of *Αστράλις*; Ptolemy has *Βακάρια*, Ammianus *Diacira*, and Zosimus *Αδίαρα*—the three last forms all referring to the bitumen springs. The name has not been recognized in the Assyrian inscriptions, though it is curious to observe that in Proto-Babylonian "*Bitumen*" was named *Ittu*, a form very much resembling the modern *Hit*.

<sup>2</sup> The Assyrian *Arakhat* means "the road," and is thus precisely synonymous with the Arabic *Serrát*, while the Bedouin of the present day apply to different portions of this canal the names of *Derb* and *Sák*, with the same meaning. At the time of the Arab conquest the name of *Serrát-el-Jamasb* was that chiefly in use, but in later times the upper and lower divisions of the canal were more often called "the two Zabs," after the famous river of that name in Assyria.

to the most abundant crops; but by far the larger portion of the region between the rivers is, at present an arid, howling wilderness, strewed in the most part with broken pottery, the evidence of former habitation, and bearing nothing but the camel thorn, the wild caper, the colocynth-apple, wormwood, and the other weeds of the desert. It must further be borne in mind that the course of the river and the features of the country on both banks are subject to constant fluctuation. Between Hit, it is true, and Felugia (near the ancient Perisabor, *Anbár* of the Arabs) which is at the head of the canal system, no great change is possible owing to the height of the river banks, but lower down everything depends on the care bestowed on the artificial embankments of the stream. When the Euphrates, for instance, breaks through at Felugia, and fills the Saklawieh canal (in the line of the old *Nahr 'Isá*) the whole country west of Baghdad is submerged, and a still more important flooding occurs lower down near Mussáib, at the head of the modern Hindíeh canal. Here in all ages there has been a great bifurcation of the river. We may infer that the right arm was the original bed, and the left arm, on which Babylon was built, the artificial derivation, because from the earliest times, as we learn from the cuneiform inscriptions, the Babylon stream has always been called the river of Sippara and not the Euphrates. In the time of Alexander, it is true, the nomenclature had been reversed, the right arm being then known as the Pallacopas, which means an artificial canal;<sup>3</sup> but under the Arabs and until comparatively modern times, the old distribution has again prevailed, the Euphrates being always described in history as the river which flowed direct to Kúfa (near the modern Nejef, the tomb of Ali), while the present stream, passing along the ruins of Babylon to Hillah and Diwanfeh, has been universally known as the Nahr *Sará*, a mere corruption of the ancient title of Sippara.<sup>4</sup> At the present day the preservation of the embankments at the point of bifurcation demands the constant care of the Baghdad Government. The object is to allow sufficient water to drain off to the westward for the due irrigation of the lands cultivated by the Khezzáil Arabs below Nejef, while the Hillah bed still retains the main volume of the stream, and is navigable to the sea; but it frequently happens that the dams at the head of the Hindíeh are carried away, and that a free channel being thus opened for the waters of the river to the westward, the Hillah bed shoals to 2 or 3 feet, and is everywhere fordable. But whether the main body of the stream may flow in the right arm or in the left, the lower portion of the Euphrates—that is, a tract of 200 miles in length intervening between Diwanfeh and the junction of the two great rivers at Korna,—forms and has always formed a succession of reedy lagoons of the most hopeless character. These were the Paludes Chaldaici of antiquity, the *El Batihát* of the Arabs, and they are best known to us at present as the Lemlún marshes, though that name is by no means of general application. It may be doubted if the fall of the

<sup>3</sup> The first element of this compound may be compared with the Hebrew *יָבַע*, "division," a root which has also produced the Arabic name of *Pelugia*; and in the second element we may perhaps recognize the *פַּל* or *Jovf*, which was the name given to the natural depression now filled by the "sea of Nejef."

<sup>4</sup> The two Sipparas, represented in the Bible by the dual form of *Sepharvaim*, were situated on the Euphrates near the point of bifurcation, but the exact spot cannot now be recognized, owing to the frequent destruction and reformation of the banks of the river in this part of its course. Under the form of *Sarán* or *Sará*, the place became famous in the Middle Ages as the site of a great Jewish academy, while the bridge by which the river was crossed on the high road from Baghdad to Kúfa was also known as the *Jisr-Sará*. The name still appertains to some remains, of no great mark or extent, immediately above the site of Babylon, but the old city of Sippara was probably higher up the river, and not far from the modern town of *Mussáib*.

land will ever admit of these marshes being drained, and certainly in its present condition a more unproductive and unpromising tract of country than the lake region can hardly be conceived. The navigation through the long lines of reeds is subject to constant interruption, the climate is pestilential, the inhabitants wild and inhospitable, and yet there are many mounds and ancient sites among the marshes that would well repay excavation, dating as they do from the earliest Chaldean times. The antiquities, indeed, of the lower Euphrates are all of the highest interest, for here were established the earliest seats of civilization, and here accordingly were localized the traditions of a terrestrial paradise. Erech (modern Warka) and "Ur of the Chaldees" (now Mugheir) were both in the immediate vicinity of the river, the banks of which, below the junction of the Samáwá branch, the outpour of the Hindíeh waters, everywhere bear evidence of a teeming population in ancient times. From Korna, where the Tigris and Euphrates at present unite, the river sweeps on in its majestic course to Bussorah; it is here 1000 yards in width, and from 3 to 5 fathoms deep, so as to be navigable by vessels of war, which not unfrequently ascend as far as the junction. Bussorah, which was formerly a very considerable city, but has now dwindled to a small town of 10,000 inhabitants, lies in a creek at a distance of a couple of miles from the river. Off the mouth of the creek, however, the Euphrates usually presents a somewhat animated appearance, the head-quarters of the Turkish naval force in the Persian Gulf being here established, and several mercantile steamers from Bombay and Baghdad being also not unfrequently anchored in the roads. The native craft is likewise numerous, and occasionally the port is visited by a vessel of war from the British squadron in the gulf. From Korna to Bussorah the banks of the river are well cultivated, and the date groves are almost continuous. Twenty-five miles further down the river Karún from Shuster and Dizful throws off an arm, which seems to be artificial, into the Euphrates. This arm is named the Haffár, and at the confluence is situated the Persian town of Mohamrah, a place which is most conveniently placed for trade, and which in the future is likely to become a place of much consequence. In the vicinity of Mohamrah was situated, at the time of the Christian era, the Parthian city of Spasini-Charax, which was succeeded by *Bahman Ardeshtír* (now Bamishír) under the Sassanians, and by *Moharzi* under the Arabs. The left bank of the river from this point belongs to Persia. It consists of an island named Abadán, about 45 miles in length, which has been formed by the alluvial deposits brought down by the river during the last fifteen centuries. New land, indeed, is yearly rising at the mouth of the river; and Fao, where we have established our telegraphic terminus connecting the Bombay and Constantinople wires, although at present on the sea-shore, is not likely long to remain so. The entire length of the Euphrates from its source near Diadin to Fao cannot be less than 1600 miles, and for three-quarters of that distance, or as far as Bír, it is more or less navigable by light boats and rafts.

The Euphrates valley, independently of its great natural advantages, has attracted some attention in recent times from its geographical position, forming as it does the most direct line of transit between the Mediterranean and the Persian Gulf, and thus offering an alternative means of communication with India, not greatly inferior to the route through Egypt. During our wars with Napoleon, early in the present century, and indeed up to the time when the introduction of steam navigation rendered the Red Sea accessible at all seasons of the year, the political correspondence of the home and Indian Governments usually passed by what is called "the Euphrates route," swift dromedaries, conveying the mails

across the desert from Bussorah to Aleppo on one line, while Tartars on post horses on the other rode from Baghdad direct to Constantinople; and even to the present day these postal lines are kept up with some modifications for the conveyance of correspondence between Baghdad and Europe. The greater facilities and the greater expedition of the Egyptian route,—especially since the construction of railways from Alexandria to Suez, and yet more recently the opening of the Suez Canal,—have, it must be allowed, established that line in popular estimation as the high road to India, but still not entirely to the exclusion of the Euphrates valley route. Various plans, indeed, have been suggested and partly executed at different times, with a view to opening up communication between the Mediterranean and the Persian Gulf. The British Government commenced in 1835 by sending out Colonel Chesney at the head of an expedition to Syria, with instructions to transport two steamers from the Mediterranean to the Euphrates, and after putting them together at Bír, N.E. of Aleppo, to attempt the descent of the river to the sea. One of these steamers was lost in a squall during the passage down the river, but the other performed the voyage in safety, and thus demonstrated the practicability of the downward navigation. Following on this first experiment, the East India Company, in 1841, proposed to maintain a permanent flotilla on the Tigris and Euphrates, and sent two vessels accordingly, the "*Nitocris*" and the "*Nimrod*," under the command of Captain Campbell of the Indian Navy, to attempt the ascent of the latter river. The experiment was so far successful that, with incredible difficulty, the two vessels did actually reach Beles, about the same parallel as Aleppo, but the result of the expedition was to show that practically the river could not be used as a high road of commerce, the continuous rapids and falls during the low season, caused mainly by the artificial obstructions of the irrigating dams, being insurmountable by ordinary steam power, and the aid of hundreds of hands being thus required to drag the vessels up the stream at those points by main force; and all subsequent experience has confirmed this view, so that at the present day, although many of the dams have been cleared away, and the navigation of the river has been generally much improved, the Turkish authorities do not attempt to run their steamers up and down throughout the year, but content themselves with a few trips between Beles and Hillah, while the river remains in flood from April to August, with the political object of controlling the riverain tribes rather than for purposes of commerce. The unsuitability of the Euphrates for continuous steam navigation was no sooner clearly ascertained than public attention began to be directed to a communication between the Mediterranean and the Persian Gulf by rail, and from that time to the present, under a hundred different forms, the Euphrates valley railway has been under the consideration both of the political and the commercial world. In the year 1872 a select committee of the House of Commons reported generally in favour of the line, remarking that about £10,000,000 sterling would probably be sufficient to cover the expense of a railway along the shortest route between the seas; and adding that the principal advantages to be derived from such an expenditure would be:—1st, the more rapid transmission of the mails between England and India; 2d, the possession of an alternative and more rapid route for the conveyance of troops; and 3d, the great extension of commerce which would follow from the opening up of such a line of communication between India and England. How the money was to be obtained, however, the committee did not venture to recommend. They merely suggested that the English Government should enter into communication with the Turkish Government, with a view to some

arrangement for a joint responsibility in raising the necessary funds, and it was on this money question that the whole scheme, and a great number of similar private schemes, fell through. It is pretty certain, indeed, that a railway of 1000 or 1200 miles through the Syrian and Mesopotamian deserts, dependent for its support entirely on the termini upon the two seas, can never be pecuniarily remunerative; and so long, therefore, as the British Government retains its hold on the Egyptian line it can hardly be worth its while to embark on so costly an undertaking merely for its possible political advantages. If the Sublime Porte had retained its position in the political world, it might have been a sound and proper measure of domestic economy to have laid down a railway from the Mediterranean to the Persian Gulf, with a view to developing the resources of the intermediate countries, and consolidating the power of the central government. Midhat Pasha, indeed, the author of the Turkish constitution, had thus some years ago, when he was governor of Baghdad, actually completed the preliminary surveys for a line from Tripoli on the Mediterranean, across the desert to Tekrit on the Tigris, and thence by Baghdad to Bussorah; and if he had remained in office the project would have been probably executed; but under present circumstances, when Asiatic Turkey threatens to become yearly more hopelessly disorganized, there is no reasonable prospect of such a scheme being resumed under native auspices. It is only, indeed, in the possible event of the Tigris and Euphrates valleys falling into the hands of a European power that we can look with any hope to the construction of railways, or the scientific embankment of the rivers, or the excavation of canals, or any of those measures of internal improvement which, however, if executed with care and skill, would soon restore these now desolate regions to their former exceptional condition of populousness, wealth, and general prosperity.

It may be of interest to add that the India Office has recently employed Captain Felix Jones, an accomplished officer of the late Indian navy, and one of the most experienced surveyors of that noble service, in constructing a map of the Euphrates and Tigris upon a large scale. All the charts and plans executed by Col. Chesney, Capt H. B. Lynch, and the various officers of the Indian navy who have been employed during the last 40 years on the survey of Mesopotamia, and most of whose memoirs have been published in the current volumes of the Royal Geographical Society's Journal, have been utilized for the purpose, and the result has been the production of a map not less remarkable as a specimen of the highest cartographic skill than for its general scientific accuracy and its unusual fineness of detail. It is to be hoped that this map will be soon engraved, and thus rendered generally accessible to the public.

(H. C. R.)

**EUPION** (Greek, *εὖ*, well, *πίον*, fat), a hydrocarbon of the paraffin series, discovered by Reichenbach in wood-tar. It is a colourless and highly volatile and inflammable liquid, having at 20° C. a specific gravity of 0.65, and expanding considerably when heated. It is unaffected by alkalis and mineral acids, and unites directly with the haloid elements. Eupion is formed in the destructive distillation of many substances, as wood, coal, caoutchouc, bones, resin, and the fixed oils. It is most conveniently prepared from rectified bone oil and rape and hemp seed oils, by treatment with sulphuric acid. Like other liquids of similar composition, it is employed for illuminating purposes, and, mixed with rape and cotton-seed oils, for the lubrication of machinery.

**EUPOLIS**, an Athenian poet of the Old Comedy, and, in the judgment of Horace, ranking, along with Cratinus and Aristophanes, as the greatest of that school, was the son of Sospolis, and was born 445 B.C. Nothing whatever is known of his personal history. With regard to his death, he is said to have been thrown into the sea by Alcibiades, who had suffered from his attacks in the *Βάπται*. Cicero,

however, points out that Eratosthenes mentions plays produced by Eupolis after the Sicilian expedition in which Alcibiades is said to have taken this revenge. It is much more likely, therefore, and much more generally believed, that he fell at the battle either of Cynossema, 411 B.C., or of Ægospotami, 408 B.C. To a lively and fertile fancy Eupolis added a sound practical judgment, which prompted him to a thorough mastery of the mechanical part of his art. The result of his studies was that he was reputed to equal Aristophanes in the elegance and purity of his diction, and Cratinus in the command of the most bitter irony and pungent sarcasm. Very curious and complicated relations subsisted between Eupolis and Aristophanes, who accused each other with the bitterest virulence, not only of imitation but of plagiarism. Some of these attacks will be found described in various parts of the scholia upon Aristophanes. The plays of Eupolis are said to have numbered in all seventeen. Meineke gives the names of fifteen which he considers genuine, and an analysis of those whose subjects can be decided from the surviving fragments.

**EUPOMPUS**, one of the most celebrated or Greek painters, was a native of Sicyon, and a contemporary of Zeuxis and Parrhasius, who flourished in the 4th century B.C. He was the head of the Sicyonian school of art, and was held in very high esteem by his countrymen. When Lysippus the sculptor was beginning his career, he consulted Eupompus as to whom he should take for his model. "Take nature herself for your model," replied Eupompus, "and be not shackled by the trammels of any predecessor." No mention is made of more than a single piece by Eupompus—a victor in the games bearing a palm.

**EURE**, a department in the north-east of France, one of the five formed out of the old province of Normandy, is bounded on the N. by the department of Seine Inférieure, W. by Calvados, S. by Orne and Eure-et-Loir, and E. by Seine-et-Oise and Oise. It has an area of 2420 square miles, and lies between 48° 39' and 49° 29' N. lat., and 0° 15' and 1° 45' E. long. The surface is flat, with some ranges of low hills, none of them exceeding 300 feet in height. The Seine flows from S.E. to N.W. through the department dividing it into two unequal parts, and after touching the frontier at two or three points forms near its mouth part of the northern boundary. All the rivers of the department flow into the Seine,—on the right bank the Audelle and the Epte, and on the left the Eure with its tributaries the Avre and the Iton, and the Rille with its tributary the Charentonne. The Eure, from which the department takes its name, rises in Orne, and flowing first east and then west through Eure-et-Loir, falls into the Seine 6 miles below Louviers, after a course of 93 miles. The Rille likewise rises in Orne, and flows generally northward to its mouth in the estuary of the Seine. The climate is mild, but moist and variable. The soil is generally clayey, resting on a bed of chalk; but along the Seine there are some barren sandy tracts quite incapable of cultivation. A great part of the department, however, is very fertile and well tilled. The chief cereal cultivated is wheat, but flax also is largely grown. There is a wide extent of pasturage on which are reared a considerable number of cattle and sheep, and especially those horses of pure Norman breed for which the department has long been celebrated. Fruit is very abundant, especially apples and pears, from which much cider and perry are made, and vineyards on the Seine, Eure, and Avre yield a considerable quantity of wine. Wild game, especially of the winged sorts, is very plentiful, and the rivers abound in fish. Iron ore is very abundant, and the department is noted for its mining and manufacturing industry. Cotton, linen, and woollen cloths of every kind are fabricated. There are large establishments for making copper ware of all kinds.

the various descriptions of, paper, nails, pins, and needles, glass for windows and glass bottles, and jewellery and trinkets. Such goods form the trade; and, in addition to these, firewood, timber, cattle, honey, wax, and corn are furnished to the district surrounding the department. Eure is divided into the following arrondissements:—Evreux, Louviers, Les Andelys, Bernay, and Pont-Audemer; and its capital is Evreux. Notwithstanding the number of industries carried on in the department the population has for some time been decreasing; while in 1851 it was 415,777, it was only 377,874 in 1872, and 373,629 in 1876.

**EURE-ET-LOIR**, a department in the northern part of France, formed out of portions of Orleanais, Maine, and Isle-de-France, is bounded on the N. by the department of Eure, W. by Orne and Sarthe, S. by Loir-et-Cher, S.E. by Loiret, and N.E. by Seine-et-Oise. It has an area of 2361 square miles, and lies between 47° 57' and 48° 57' N. lat., and 0° 44' and 2° 0' E. long. The western and north-western parts consist of undulations of hill and valley, with springs, rivulets, and small lakes. The eastern part is a level and uniform and very fruitful plain. The northern part is watered by the Eure, with its tributaries the Vègre, Blaise, and Avre, a small western portion by the Huisne, and the southern by the Loir with its tributaries the Connie and the Ozanne. The air is pure, and the climate mild, and not subject to sudden changes. The soil consists, for the most part, either of clay intermixed with sand or of calcareous earth, and is on the whole fruitful; but in some portions of the S.W. it is sandy and dry, and many tracts of land are so poor as to be uncultivated. The agriculture is better conducted than in most of the departments of France, and the average yield of the various kinds of corn is about three times greater. The wheat is remarkably fine; and among the other agricultural products are rye, barley, oats, hemp, flax, beet-root, melons, and onions. Wine is not extensively produced, nor of the best quality; but in some parts there is an abundant supply of apples, from which cider is made as the common drink of the inhabitants. The extensive meadows supply pasturage for a large number of cattle and sheep, the average yield of wool being double that of any of the other departments. There are some iron mines, and granite, marble, and gypsum quarries. The manufactures are not extensive; but leather, paper, cotton goods of various kinds, serges, flannels, and other coarse woollens, hosiery, hats, caps, household linen (such as sheetings and table linen), and some earthenware are furnished. The department has Chartres for its capital, and is divided into the arrondissements of Chartres, Châteaudun, Dreux, and Nogent-le-Rotrou. The population, which in 1851 was 415,777, was 282,622 in 1872 and 283,075 in 1876.

**EURIPIDES** is the mediator between ancient and modern drama. No great poet is more difficult to estimate justly, and none has been judged more unfairly. He cannot claim the full excellence of the school from which he began the departure, nor yet that of the school which at last arose on the foundations laid by him. His time forced an inner conflict on the art to which his genius was devoted. We must try not to look at him either wholly from a modern stand-point or wholly from that of the age which he closed, but rather to place ourselves, as far as we can, at the line of separation on which he stood, and endeavour to see how he dealt with the perplexing forces of an inevitable transition.

All that is known about his outward life may be shortly told. He was born in 480 B.C., on the very day, according to the legend, of the Greek victory at Salamis, where his Athenian parents had taken refuge; and a whimsical fancy has even suggested that his name—son of Euripus—was

meant to commemorate the first check of the Persian fleet at Artemisium. His father Mnesarchus was at least able to give him a liberal education; it was a favourite taunt with the comic poets that his mother Clito had been a herb-seller—a quaint instance of the tone which public satire could then adopt with plausible effect. At first he was intended, we are told, for the profession of an athlete,—a calling of which he has recorded his opinion with something like the courage of Xenophanes. He seems also to have essayed painting; but at five-and-twenty he brought out his first play, the *Peliades*, and thenceforth he was a tragic poet. At thirty-nine he gained the first prize, and in his career of about fifty years he gained it only five times in all. This fact is perfectly consistent with his unquestionably great and growing popularity in his own day. Throughout life he had to compete with Sophocles, and with other poets who represented tragedy of the type consecrated by a splendid tradition. It was but natural that the judges should crown works of that school more frequently than the brilliant experiments of an innovator. The hostile criticism of Aristophanes was witty; and, what has not always been observed, it was true, granting the premise from which Aristophanes starts, that the tragedy of Æschylus and Sophocles is the only right model. Its unfairness, often extreme, consists in ignoring the changing conditions of public feeling and taste, and the possibilities, changed accordingly, of an art which could exist only by continuing to please large audiences. It has usually been supposed that the unsparing derision of the comic poets contributed not a little to make the life of Euripides at Athens uncomfortable; and there is certainly one passage (in a fragment of the *Melanippe*,—Nauck, *Frag.* 495) which would apply well enough to his persecutors:—

ἄβδρᾶν δὲ πολλοὶ τοῦ γέλωτος οὐρεκα  
ἀσκοῦσι χάριτας κερτῆρους· ἐγὼ δὲ πως  
μισῶ γελούσας, οἷτινες σοφῶν περὶ  
ἀχάλλῃ ἔχουσι στήματα.  
To raise vain laughter, many exercise  
The arts of satire; but my spirit loathes  
These mockers whose unbridled mockery  
Invades grave themes.

The infidelity of two wives in succession is alleged to explain the poet's tone in reference to the majority of their sex, and to complete the picture of an uneasy private life. He appears to have been repelled by the Athenian democracy, as it tended to become less the rule of the people than of the mob. Thoroughly the son of his day in intellectual matters, he shrank from the coarser aspects of its political and social life. His best word is for the small farmer (*autourgos*), who does not often come to town, or soil his rustic honesty by contact with the crowd of the market-place.

About 409 B.C. Euripides left Athens, and after a residence in the Thessalian Magnesia repaired, on the invitation of King Archelaus, to the Macedonian court, where Greeks of distinction were always welcome. In his *Archelaus* Euripides celebrated that legendary son of Têmenus, and head of the Têmenid dynasty, who had founded Æge; and in one of the meagre fragments he evidently alludes to the beneficent energy of his royal host in opening up the wild land of the North. It was at Pella, too, that Euripides composed or completed, and perhaps produced, the *Bacchæ*. Jealous courtiers, we are told, contrived to have him attacked and killed by savage dogs. It is odd that the fate of Actæon should be ascribed, by legend, to two distinguished Greek writers, Euripides and Lucian; though in the former case at least the fatæ has not such appropriateness as the Byzantine biographer discovers in the latter, on the ground that its victim "had waxed rabid against the truth." The death of Euripides, whatever its manner, occurred in 406 B.C., when