fords of the human mind; and what are termed multiplication and division are only abbreviated forms of addition and subtraction. The origin, however, of the earliest and most necessary of the arts and sciences is lost in the shades of antiquity, since it arose long before the period when men began to take special notice and make some kind of record of the phenomena arising from the natural sciences and pursuits. In the absence of positive information, we seem authorized in referring the first knowledge of arithmetic to the East (see Edinburgh Review, xviii. 185). From India, China, Phoenicia, and Egypt the science passed to the Greeks, who extended its laws, improved its processes, and widened its sphere. To what extent the Orientals carried their acquaintance with arithmetic is not determined. The greatest discovery was in the department of the mathematics, namely, the establishment of our system of cipher, or of figures considered as distinct from the letters of the alphabet, belonging undeniably, not to Arabia, as is generally supposed, but to the remote East, probably India. It is to be regretted that the name of the discoverer is unknown, for the invention must be reckoned among the greatest of human achievements. Our numerals were made known to the Western parts by the Arabs, who, though they were nothing more than the mediators of transmission, have enjoyed the honor of giving the names of their science. Arabic numerals were unknown to the Greeks, who made use of the letters of the alphabet for arithmetical purposes (see Etymology, s. v.). The Hebrews were not a scientific or mathematical, but a religious and practical nation. What they borrowed from others of the arts of life they used without surrounding it with theory, or expanding and framing it into a system. South Arabian numerals, described by them under the form of the word מ"ע, מ"ע, מ"ע, of the name of their mathematics, that is, to determine, limit, and number. Of their knowledge of this science little is known more than may be fairly inferred from the results and tables which they carried on, for the successful prosecution of which some skill at least in its simpler processes must have been absolutely necessary; and the large amount which appears here and there in the sacred books serves to show that their acquaintance with the art of reckoning was considerable. See Numbers. Even in fractions they were not inexperienced (Genesis, Leviticus, p. 59). For figures, the Jews, after the Babylonian exile, made use of the letters of the alphabet, as appears from the inscriptions on the so-called Samaritan coins (Eckhel, Doctr. Num. i. iii. 408) and it is not unlikely that the ancient Hebrews did the same, as well as the Greeks, who borrowed their alphabet from the Phoenicians, neighbors of the Israelites, and employed it instead of numerals (Schmidt, Buch der Mathematik, Tab. 172, 174). See Abbreviation.

Arius, born toward the close of the third century, in Libya, according to others, in Alexandria. He wrote a theological work, Theos, extracts from which are given in the writings of Athenagoras. He died in 336. For his doctrines and his history, see Arianism.

Ark is used in the Bible to designate three vessels of special importance.

1. Noah’s Ark (גֶּשֶם, tebah); Sept. καβαβά, a chest; Josephus, אבר, a coffin; Vulg. arca, Gen. vi. 13), different from the term גֶּשֶם, גֶּשֶם, applied to the ark of the covenant, and other receptacles which we know we have, but the same that is applied to the ark in which Moses was hid (Exod. ii. 3), the only other part of Scripture in which it occurs. In the Later passage the Septuagint renders it καβαβά, a chest: it does not denote any kind of chest or coffin, while the exclusive application of tebah to the vessels of Noah and of Moses would suggest the probability that it was restricted to such chests or arks as were intended to float upon the water, of whatsoever description. The identity of the name with that of the wicker basket in which Moses was exposed on the Nile has led some to suppose that the ark of Noah was also of wicker-work, or rather was wattled and smeared over with bitumen (Athen. Vers. epich., viii. 14). This is not impossible, seeing that vessels of considerable burden are thus constructed at the present day; but there is no sufficient authority for carrying the analogy to this extent. The boat-like form of the ark, which repeated pictorial representations have rendered familiar, is fitted for progression and for cutting the waves; whereas the ark of Noah was really destined to float belly upon the waters, without any other motion than that which it received from them. If we examine the passage in Gen. vii. 11-16, we can only draw from it the conclusion that the ark was not a boat or ship; but, as Dr. Robinson (in Calmet’s Dict. s. v.) describes it, “a building in the form of a parallelogram, 300 cubits long, 50 cubits broad, and 30 cubits high. The length of the cubit, in the great variety of measures that bore this name, it is impossible to ascertain and useless to conjecture. So far as the name affords any evidence, it also goes to show that the ark of Noah was not a regularly-built vessel, but merely intended to float at large upon the waters. We may, therefore, probably with justice, regard it as a large vessel, floating house, with a roof either flat or only slightly inclined. It was constructed with three stories, and had a door in the side. There is no mention of windows in the side, but there, i.e. probably in the flat roof, where Noah commanded to make them of a cubit in size (Gen. vii. 16). That this is the meaning of the passage seems apparent from Gen. vii. 15, where Noah removes the covering of the ark in order to ascertain whether the ground was dry—a labor unnecessary, surely, had there been windows in the sides of the ark.”

The purpose of this ark was to preserve certain persons and animals from the deluge with which God intended to overwhelm the land, in punishment for man’s iniquities. The persons were eight—Noah, his wife, and his three sons and their wives (Gen. vii. 7; 2 Pet. ii. 5). The animals were, one pair of every “clean” animal, and seven pairs of all that were “clean.” By “clean” we understand fit, and by “unclean” unfit, for food or sacrifice. Of birds there were seven pairs (Gen. vii. 2, 3). Those who have written profusely and largely on the subject have been at great pangs to provide for all the existing species of animals in the ark of Noah, showing how they might be distributed, fed, and otherwise provided for. But they are all, far from having cleared the matter of all its difficulties, which are much greater than their own, in their general ignorance of natural history, were aware of. These difficulties, however, chiefly arise from the assumption that the species of all the earth were collected in the ark. The number of such species has been vastly underrated by these writers, partly from ignorance, and partly from the desire to limit the number for which they imagined they were required to provide. They have usually satisfied themselves with a provision for three or four hundred species at most. "But of the existing mammalia considerably more than one thousand species are known; of birds, five or six thousand; of reptiles, very few kinds of which can live in water, two thousand; and the researches of travellers and naturalists are making frequent and most interesting additions to the number of these, and all other classes. Of insects (using the word in the popular sense) the number of species is immense; to say one hundred thousand would be moderate; each has its appropriate habitation and food, and these are necessary to its life; and the larger number could not live in water. Also the innumerable millions upon millions of animals must be provided for, for they have all their appropriate and diversified places and circumstances of existence" (Dr. J. Pye Smith, On
The main thing looked at in the preservation of them in the ark, that men might have all of them ready for use after the Flood; which could not have been had not the several kinds been preserved in the ark, although we suppose them not destroyed in all parts of the world."

As Noah was the progenitor of all the nations of the earth, and as the ark was the symbol of the second and general race, we might expect to find in all nations traditions and reports more or less distinct respecting him, the ark in which he was saved, and the Deluge in general. Accordingly, no nation is known in which such traditions have not been found. They have been very industriously brought together by Bauder, Bryant, Faber, and other mythologists. See Aramaic; Noah. And as it appears that an ark—what is, a boat or chest—was carried about with great ceremony in most of the ancient mysteries, and occupied an eminent station in the holy places, it has had much reason been concluded that this was originally intended to represent the ark of Noah, which eventually came to be regarded with superstitious reverence. On this point the historical and mythological testimonies are very clear and certain. The tradition of a deluge, by which the race of man was swept from the face of the earth, has been traced among all the ancient nations and all races, and some believe that the belief has prevailed that certain individuals were preserved in an ark, ship, boat, or raft, to replenish the desolate earth with inhabitants. Nor are there three traditions uncorroborated for the most ancient and universal of all.

The difficulty of ascertaining in one spot, or of providing for in the ark, the various mammalia and birds alone, even without including the otherwise necessary provision for reptiles, insects, and fishes, is what calls for the most care, and probably for some reason the current belief in deluges was the result of the difficulty of ascertaining the comparatively small number of species which the writers on the ark have been willing to admit into it, what provision can be made for the immensely larger number which, under the supposed conditions, would really have required its shelter.

There seems to be no way of meeting these difficulties but by adopting the suggestion of Bishop Stillinger, approved by Matthew Poole, Dr. J. Pye Smith, Le Clerc, Rosenmüller, and others, namely, that the object of the Deluge was to sweep man from the earth, it did not extend beyond that region of the earth which man then inhabited, and that only the animals of that region were preserved in the ark. Bishop Stillinger, who wrote in plain and easy language long before geology was known as a science, and when, therefore, these discoveries were altogether unknown of, for which, in our day, such warm commendations have been given, expressed the belief that the Flood was universal as to mankind, and that all except those preserved in the ark, were destroyed. But he sees no evidences from Scripture that the earth was perfectly flooded; he considers it as possible, that it can have been the case; and hence that reason there can be to extend the Flood beyond the limits of the earth which man inhabited; the preservation of the beast was secondary, and could not but be encommodated with a preservation of mankind. But (the occasion of the being the sin of man, who was punished in the days of Noah), the object of the ark was not, as where there are animals and no men, there seems no necessity of preserving the Flood itself" (Origin of Sons, p. 349, § 15). The bishop further argues that the reason for preserving living creatures in the ark was that there might be a stock of the same and domestic animals which should be immediately serviceable for man after the Flood, which, we certainly think, is a correct view.

The Deluge in Ancient Times.
2. The Ark of Bezaleel (תַּנִּים, tekhôn; Sept. תַּנִּים). In Exod. ii, 3, we read that Moses was exposed among the reeds by the river, and that the ark was made of papyrus reed (Egypt. papyros), which grows in Egypt in marshy places. It was used for a variety of purposes, even for food. Plato says, from the plant itself, they made boats, and other ancient writers inform us that the Nile whirlpools were made of papyrus. Bows made of this material were noted for their swiftness, and are alluded to in Is. viii, 2. See REED.

3. The Sacred Ark of the Jews (תֵּבָן or תָּבָן, or אָרֶץ; Sept. and New Test. אָרֶץ), different from the term applied to the ark of Noah. It is the common name for a chest or censer, whether applied to the ark in the tabernacle, to a coffin, to a mummy-chest (Gen. i, 26), or to a chest for money (2 Kings xii, 9, 10). Our word ark has the same meaning, being derived from the Latin arca, a chest. The sacred chest is distinguished from others as the "ark of God" (1 Sam. vi, 3), "ark of the covenant" (Josh. iii, 6; Heb. ix, 4), and "ark of the law" (Exod. xxxi, 29). This ark was a kind of box, of an oblong shape, made of shittim (acacia) wood, a cubit and a half broad and high, two cubits long, and covered on all sides with the purest gold. It was ornamented on its upper surface with a border or rim of gold; and on each of the sides, at equal distances from the top, were two gold rings, in which were placed to remain there perpetually the gold-covered poles by which the ark was carried, and which continued with it after it was deposited in the tabernacle. The Levites of the house of Kohath, to whose office this especially appertained, bore it in its progress. Probably, however, when removed from within the wall in the most holy place, which was its proper position, or when taken out thence, priests were its bearers (Num. vii, 9; x, 21; iv, 5, 19, 29; 1 Kings viii, 3, 5). The ends of the staves were visible without the wall of the holy place of the temple of Solomon, the staves being drawn to the ends, apparently, but not out of the rings. The ark, when transported, was enclosed in the "vail" of the hallowed tabernacle, in the vail of the cloud of the congregation, a veil of blue cloth over all, and was therefore not seen. The lid or cover of the ark was of the same beaten gold. Over it was the cherubim, with their faces turned toward each other, and inclination toward the lid (otherwise called the mercy-seat). See CHERUB. Their wings, which were spread out over the top of the ark, formed the throne of God, the King of Israel, while the ark itself was his footstool (Exod. xxv, 19-22; xxxvii, 1-9, 15, 35; 1 Kings vii, 51, 52; Ezek. vii, 23, ed. Maron; 4:10; Apule. Met. x, 3, 12). Pausan. viii, 12, 13. Ovid. Ars Am. ii, 36 sq.; Catall. lix, 256 sq.; See generally Reclus, Hist. des arts, i, 5, 16 sq.; Carpzov, Appar. p. 290 sq.; Schenkel, Jüd. Altert., p. 457 sq.; Buxtorf, Hist. arum sacr. in Ugariti Thebae et Aegypti, iii; Hoffmann, in the Holl. Encycl. xiv, 27 sq.; Ursel, Jbr. 213, 263 sq.; Kuhn, Nebenstücke auf dem Alten, Hertford, 1775; Conybeare, 1791; Tholuck, Geschichte der Weltreligionen, Lips. 1750, Vinet, 1771; Levy, Jb. theolog. philol. p. 112 sq.; Van Til, De tabernae. M., s. p. 117 sq.)

This ark was the most sacred object among the Israelites; it was deposited in the hallowed place, and the part of the tabernacle, called "the holy of holies" (and afterward in the corresponding apartment of the Temple, where it stood so that one end of each of the poles by which it was carried (which were drawn out so as to allow the ark to be placed against the back wall) touched the vault which separated the two apartments of the tabernacle (1 Kings vii, 8). It was the ark of Aaron. We read in 1 Kings viii, 9, that "there was nothing in the ark save the two tables of stone which Moses put there at Horeb." Yet Paul, the author of Heb. ix, 4, asserts that besides the two tables of stone, the "cup of manna" and "Aaron's rod that budded" were inside the ark, which were directed to be "under the lid" and "kept before the testifying"; i.e., before the tables of the law (Exod. xx, 20); and probably, since there is no mention of any other receptacle for them, and some would have been necessary, the statement of 1 Kings viii, 9, implies that by Solomon's time these relics had disappeared. The expression "תֵּבָן תָּבָן," Deut. xxxi, 76, obscurely rendered "in the side of the ark" (Esth. V. 7), merely means "beside" it.

During the marches of the Israelites it was covered with a purple vail, and borne by the priests, with great reverence and care, in advance of the host (Num. iv, 6, 17; v, 9). It was before the ark, thus in advance, that the waters of the Jordan separated, and it remained in the bed of the river, with the attendan
priests, until the whole host had passed over; and no soon her was it also brought up that the waters resumed their course (Josh. iii. iv. 15). We may notice a fiction of the Talmud that there were two arks, one which remained in the shrine, and another which preceded the camp on its march, and that this latter contained the broken tablets of the law, as the (Calmet's Dictionary, sur l'Arche d'Alliance; Husa, De legis et acris imposita, fol. Err. and Lp. n. d. 41o). See Temple.

Concerning the design and form of the ark, it appears that clear and unexpected light has been thrown by the discoveries which have of late years been made in Egypt, and which have unfold ed to us the rites and mysteries of the old Egyptians. (See), Deser. de I'Egypte, Att. i. pl. 23, fig. 4; pl. 24, fig. 3; iii. pl. 23, 24, 22; comp. Rossmother, Morganli, ii. 96 sq.; Heeren, Jocae, ii. ii, 881; Spencer, Leg. Hist. iii. 6, p. 1364 sq.; Bahr, Arch. iii. 87, 402 sq.)

One of the most important ceremonies was the procession of the ark, and in the Rosetta stone, and frequently occurs on the walls in the temple. The frames were of two kinds; the one a sort of canopy; the other on ark or sacred boat, which may be termed the great shrine. This was carried with great pomp by the priests, a certain number being selected for that duty, who supported it on their shoulders by means of metal rings passing through the side of the shrine, or it stood upon a stand or table, in order that the prescribed ceremonies might be discharged before it. The stand was also carried in procession by another set of priests, following the shrine, by means of similar staves, a method usually adopted for carrying large statues and sacred emblems, too heavy or too important to be borne by one person. The same is stated to have been the custom of the Jews in some of their religious processions (see. 1 Chron. xiv. 2; 15; 2 Sam. xv. 24; and Jos. xi. 32), and in carrying the ark to its place, into the oracle of the house, to the most holy place, when the Temple was built by Solomon (1 Kings viii. 6). . . . . .

Some of the ark or boats contained the emblem of Life and Stability, which, when the veil was drawn aside, were partially seen; and others presented the beetle to the sun, overshadowed by the wings of two figures of a griffon, which call to mind the Cicadas of the Jews (Wilkinson's Anc. Egyptian, v. 271, 275). The ritual of the Etruscan, Greek, Roman, and other ancient nations, included the use of what Cicero calls aurum pentaurum (Protestp. p. 12). The same lotus (lotus, v. 573) also contains an allusion of a proverbial character to the ark and its rites, which seems to show that they were popularly known, which we have that "only the master (archos) may enter the ark" (archos). In Latin, also, the word occasion, cumulus.
Ark

Arkite (Heb. 'Arkît̄, 'Arki; Sept. and Joseph. Antiquit. 8:17), a designation of the inhabitants of Arka (Num. x. 10; 1 Chron. i. 15), who are mentioned in Gen. x. 17; 1 Chron. i. 15, as descended from the Phoenician or Sidonian branch of the great family of Canaan. This, in fact, as well as the other small northern states of Phoenicia, was a colony from the great parent state of Sidon. Arka, or Arca (Arca), their chief town, lay between Tripolis and Antiochus, at the western base of Lebanon (Joseph. Ant. l. i. 6, 2; Joseph. Ant. v. 8, 3). Josephus (Ant. viii. 8, 3) makes Banah, who in 1 Kings iv. 16, is said to have been superintendent of the tribe of Arka (Arca) by the sea, and it, as commonly supposed, the capital of the Arkites is intended, their small state must, in the time of Solomon, have been under the Hebrew yoke. In the time of Alexander a splendid temple was erected here in honor of Astarte, the Venus of the Phoenicians (Mac rob. Sat. i. 21). Subsequently Arka shared the lot of the other small Phoenician states in that quarter; but in later times it formed part of Herod Agrippa's kingdom. Titus passed through it on his return from the destruction of Jerusalem (Joseph. War, vii. 5, 1). In the Mishna (Mibb. Rabb. 37) it is called "Arkem of Lebanon." The name and site seem never to have been unknown (Mannert, p. 391), although for a time it bore the name of Mount Lebanon (Archa. Vet. De Gen. xxix., 1), from having been the birthplace of Alexander Severus (Lundell, Alex. Ser.). Coins are extant of it (Eckhel, D. bibl. Ant. iii. 369), but not of its Phoenician period (Cessens, Moscov. Phoen. ii. 269 sq.). It was eventually the seat of a Christian bishopric (Le Quien, Orig. Chrest. ii. 815, 822). It is repeatedly noticed by the tribe of the Arka (Arca) (Mich. iv. 13, vi. 30 sq.; Schultens, Vite Sidon. iii. 5, 7; Rosenni, Bibl. Chron. p. 262). It was mentioned in all the itineraries of this region, and is conspicuous in early ecclesiastical records. It also figures largely in the exploits of the Crusaders, by whom it was unsuccessfully besieged in 1150, but at last taken in 1153 by Bertran (see Robinson's Res. exp. ed. iii. 368 sq.). In 1292 it was totally destroyed by an earthquake. It lies 3 Roman miles from Antiochus, 18 miles from Tripolis, and according to Athanasius, a person from the sea (Herc. Sven. p. 145). In point of situation, this town (Schoen. Res. exp. p. 360) is not the site and ruins. Eckhel, D. bibl. Ant. iii. 369, in travelling from the northeast of Lebanon to Tripolis, at a distance of about four miles south of the Naucratis rock church, came to a hill called Telebit, which, from its regularly flattened summit and smooth sides, appeared to be Candidates. It was told that on it the ruins of last bottoms and walls. Upon an elevation on its east and south sides, which commands a beautiful view over the plain, the sea, and the Lebanon mountains, are large and extensive heaps of roundish, traces of masonry, blocks of stone, remains of walls, and fragments of marble columns. In the vicinity of the ruins the remains of Arka and the hill was probably the site of a temple (Herc. Sven. p. 145). The present village has 21 Ch.
Ancient Egyptian Stela.

The purpose or object of the ark was to contain in violate the Divine autograph of the two tablets, that 'covenant' from which it derived its title, the idea of which was inseparable from it, and which may be regarded as the depository of the Jewish dispensation. The perpetual safe custode of the material tablets no doubt suggested the moral observance of the precepts inscribed. The words of the Ark, Vers An 1 Chr. xii. 3, seem to imply a use of the ark for the purpose of an oracle; but this is probably erroneous, and "the seat of the Sept. remains it (see Genesis, Lev. x. v. 27). Occupying the most lofty spot of the whole sanctuary, it tended to exclude any idol from the centre of worship. And Jeremiah (ii. 25) looks to the time when even the ark should be "no more remembered" at the climax of spiritualised religion apparently in Messianic times. It was also the support of the mercy-seat, materially symbolizing, perhaps, the "covenant" as that on which "mercy" rested. It also contained a breastplate, and the stone tablets, an arched structure on this latter and placed in an arched structure, possibly as a support for a back to that longed after a material object for reverential feeling which is common to all religions. It was, however, never seen, save by the high-priest, and revered in this respect the ark it symbolized, whose face none might look upon and live. That this reverential feeling may have been impaired during its absence among the Philistines seems probable from the case of Uziah (2 Chr. 26). — It is.

Arbela (Heb. Arba', אַרְבָּא; Sept. and Joseph, Aristophone, like the Sans., Arpul', Ἀρπολύς), a designation of the inhabitants of Arba (Am. vi. 10; 'Ares, Prov. vi. 15), who are mentioned in Gen. x. 17; 1 Chron. i. 15, as descended from the Phoenician or Nilotic branch of the great family of Cushites. This, in fact, as well as the other small northern states of Phoenicia, was a colony from the great parent state of Sidon. Arka, or Ares (Archa), their chief town, lay between Tripolis and Antipatris, at the western base of Lebanon (Joseph. Ant. i. 4, 21; Jerome, Chron. in Gen. x, 15). Josephus (Ant. vii. 2, 5) makes Kara, who in 1 Kings vi. 16, is said to have been superintendent of the tribe of Asher, governor of Arka (Azipi) by the sea; and if, as commonly supposed, the capital of the Arkites is intended, their small state must, in the time of Solomon, have been under the Hebrew yoke. In the time of Alexander a splendid temple was erected here in honor of Astarte, the Venus of the Phenicians (Macrob. Sat. i. 21). Subsequently it was the seat of the other small Phenician states in that quarter; but later it formed part of Herod Agrippa's kingdom. Titus passed on his return from the destruction of Jerusalem (Plut., Joseph. War. v. 7, 1), in the Roman period (Suet. Gall. 37) it is called "Arbela of Lebanon" (¹²οπαλβανί). The name and site seem never to have been unknown (Hannert, p. 361), although for a time it bore the name of "Arbela Libani" (Amel. Vict. De Or. xxiv. 1), from having been the birthplace of Alexander Severus (Lambeth, Adv. Sec.); coins are extant of it (Kerbel, D. t. An. iii. 369), but not of its Phenician period (Gezeulus, Monum. Phen. ii. 283 sq.). It was eventually the seat of a Christian bishopric (Le Quien, Orig. Chris. ii. 815, 823). It is repeatedly noticed by the Arabian writers (Michaels, Spicil. ii. 25; al-Maqrizi, Edal. i. 50 sq.; Schultens, Visi Saladin; Edrisi, p. 13; Rosenmüller, Buchh. Chron. p. 252). It is mentioned in all the itineraries of this region, and is conspicuous in early ecclesiastical records. It also figures largely in the exploits of the Crusaders, by whom it was unsuccessfully besieged in 1099, but at last taken in 1100 by Bohemond (see Johnson's Researches, new ed. iii. 58 sq.). In 1292 it was totally destroyed by an earthquake. It lay 32 Roman miles from Antipatris, 18 miles from Tripoli, and, according to Almida, a parasang from the sea (Tom. Syr. p. 13). In a position corresponding to that of its situation, Shave (Ovations, p. 270) noticed the site and ruins. Burckhardt (Syria, p. 152), in traversing from the north-east of Lebanon to Tripoli, at the distance of about four miles south of the Nahr-el-kheir (Eleutherias), came to a hill called Tel-Ibe, which, from its regularly flattened conical form and smooth sides, appears to be artificial. He was told that on its top were some ruins of habitation and walls. Upon an elevation on its east and south sides, which command a beautiful view over the plain, the sea, and the Anzab mountains, are ruins andExcavated heaps of rubbish, traces of ancient dwellings, blocks of hewn stone, remains of walls, and fragments of marble columns. These are no doubt the remains of Arka; and the hill was probably the acropolis or citadel, or the site of a temple (Heinevetter, Handbuch, iii. 30 sq.). The present village has 21 Greek and 7 Moslem families—a wretched hamlet and the