

GLASSIUS, SOLOMON (1593-1656), theologian and Biblical critic, was born at Sondershausen, in the principality of Schwarzburg-Sondershausen, in 1593, received his school-education at the gymnasium of Gotha, and in 1612 entered the university of Jena, where, with the exception of some months spent at Wittenberg in 1615, he passed the following nine years of his life. As a student of theology under John Gerhard he directed his attention especially to Hebrew and the cognate dialects; in 1619 he was made an "adjunctus" of the philosophical faculty, and some time afterwards he received an appointment to the chair of Oriental languages. From 1625 to 1638 he discharged the duties of superintendent in Sondershausen; but in the latter year, shortly after the death of Gerhard (1637), he was, in accordance with the last wish of that great man, appointed to succeed him in the chair of theology at Jena. He did not, however, continue long at that university; for in 1640, at the earnest invitation of Duke Ernest the Pious, he removed to Gotha, there to act as general superintendent in the execution of important reforms which had been initiated both in the ecclesiastical and in the educational establishments of the duchy. The delicate duties attached to this office he discharged with singular tact and energy; and when called upon to take part in what is known as the "syncretistic" controversy, by which Protestant Germany was so long vexed, he manifested a combination of firmness with liberality, of loyalty to the past with a just regard to the demands of the present and the future, which unhappily have only too seldom been equalled in theological disputes. His principal work, the well known *Philologia Sacra*, published originally in 1625 and still regarded as a work of great value in biblical hermeneutic; and it has an historical importance as marking the transition from the earlier views on questions of biblical criticism to those of the school of Spener. It was more than once reprinted during the author's lifetime, and appeared in a new and revised form, edited by Dathe and Bauer at Leipzig, towards the close of the century (1776-1797). Glassius succeeded Gerhard also in the editorship of the Weimar *Bibelwerk*, and he wrote the commentary on the poetical books of the Old Testament for that publication. A volume of his *Opuscula* was printed at Leyden in 1700. He died in 1656.

GLASTONBURY, a market town and municipal borough of England, is situated near the middle of Somersetshire, about 22 miles S.W. of Bath, on the great western road from London to Exeter. The spot occupied by the town is a sort of peninsula formed by the windings of the river Brue, which flows west through the valley between the Poldew and the Mendip Hills; and in earlier times it was to all intents an island, as the country round was an extensive marsh, broken, however, by the Tor of St Michael to the N.E. of the town. Of the public buildings the most important, besides the ruins of the great abbey, are the church of St John the Baptist, in the Perpendicular style, with a tower of fine proportions; the church of St Benedict, dating from between 1493 and 1524; the hospital of St John, founded in 1246; and the George Inn, erected about the time of Henry VII. or Henry VIII. There was formerly in the town a remarkable cross, which is figured in Warner's *Glastonbury*; but it fell into decay, and was replaced by the present insignificant monument in 1846. Though Glastonbury has a station on the Somerset and Dorset Railway, and communicates with the estuary of the Severn by means of a canal for vessels of 70 or 100 tons burden, it has comparatively little trade. The woollen manufacture was introduced by the duke of Somerset in the first half of the 16th century, as may be seen at length in Strype's *Life of Crammer*; but neither that nor the manufacture of silk, which was also carried on to some extent

during the 18th century, is now of any importance. There are tanneries, however, and tile-works. The population of the town in 1861 was 3496, and in 1871 it was 3670.

The abbey of Glastonbury is without doubt one of the very earliest ecclesiastical foundations in England. In the words of Mr Freeman ("King Ine," *Proc. of Somersetshire Arch. Soc.*, 1874), "it is on any showing a tie between the Briton and the Englishman, between the older Christianity of our island and the newer, the one church of the first rank which lived through the storm of English conquest, which passed into the hands of our victorious fathers as a trophy of victory undestroyed and un plundered." But unfortunately "everything relating to its early history is so enveloped in legend that one has to tread one's way with the greatest caution at every step." As Canon Stubbs remarks,¹ the extravagant claims of the monks in regard to the antiquity and celebrity of their church "doubtless provoked criticism, and criticism forced on them the need of a forged history to assert, and of forged monuments to support these pretensions. The fabrication of such evidence must have gone on at Glastonbury on a scale proportioned to the claims; and William of Malmesbury, it would almost seem, undertook to erect the story out of materials which he distrusted. This did not content his employers, and they interpolated his work to a degree which makes it impossible to rely with confidence on any part of it."

Though Glastonbury is not mentioned either by Bede or by the authors of the Saxon Chronicle as one of the early foundations, its existence (continues Prof. Stubbs) is proved by the incontrovertible authority of the letters of St Boniface and the life of the same by S. Willibald. The name of Glastonbury however is of comparatively modern origin, being a corruption of the Saxon *Glastingaburh* or town of the Glastings. By the Britons the spot seems to have been called Ynys yr Avallon (Latinized as Avalonia), the Island of Apples, or Ynyswitrin, the Glassy Island; and it became the local habitation of various fragments of Celtic romance.

According to the legends which grew up under the care of the monks, the first church of Glastonbury was a little walled building erected by Joseph of Arimathea as the leader of the twelve apostles sent over to Britain from Gaul by St Philip. About a hundred years later, according to the same authorities, the two missionaries

Phaganus and Deruvianus who came to King Lucius from Pope Eleutherius established a fraternity of anchorites on the spot, and after three hundred years more St Patrick introduced amongst them a regular monastic life. About 546 David of Menevia is said to have built a new church near the old one, and in the 7th century the old one was encased with boards and covered with lead by the care of Paulinus of York. In the early part of the 8th century the great West Saxon king Ine (cf. charter in Kemble, *Codex diplomaticus avi Saxonici*, vol. i. No. lxxi.) built and endowed a monastery at Glastonbury, which, in spite of the preceding establishments, may almost be considered as a new foundation. From the decadent state into which, like other monasteries, Glastonbury was brought by the Danish invasions, it was brilliantly recovered by the powerful hand of Dunstan who had been educated within its walls and was appointed its abbot about 946. The church and other buildings of his erection remained till the installation, in 1082, of the first Norman abbot, who inaugurated the new epoch by commencing a new church. His successor Herlewin (1101-1120), however, dissatisfied with the meanness of the edifice, pulled it down to make way for a finer structure. Henry of Blois (1126-1172) added greatly to the extent of the monastery, building a bell tower, a chapter-house, a cloister, a dormitory, a refectory, a palace, a brew-house, &c. In 1184 (on 25th May) the whole of the buildings were laid in ruins by fire; but Henry II. of England, in whose hands the monastery then was, entrusted his chamberlain Rudolphus with the work of restoration, and caused it to be carried out with much magnificence. The great church of which the ruins still remain was then erected. In the end of the 12th century, and on into the following, Glastonbury was distracted by a strange dispute, caused by the attempt of Savaric the ambitious bishop of Bath to make himself master of the abbey. The conflict, carried on alternately by blows and bribes, was brought to a close by the decision of Innocent III., that the abbacy should be merged in the new see of Bath and Glastonbury, and that Savaric should have a fourth of the property. On Savaric's death his successor gave up the joint bishopric and allowed the monks to elect their own abbot. From this date to the Reformation the monastery continued to flourish, the chief events in its history being connected with the maintenance of its claims to the possession of the bodies or tombs of King Arthur and St Dunstan. As early at least as the beginning of the 11th century the tradition that Arthur was buried at Glastonbury appears to have taken shape; and in the reign of Henry II., according to Giraldus Cambrensis and others, the abbot Henry de Blois, causing search to be made, discovered at the depth of 16 feet a massive oak trunk with an inscription "Hic jacet sepultus inclitus rex Arthurus in insula Avalonia." After the fire of 1184 the monks asserted that they were

¹ Introduction to Memorials of St Dunstan, Rolls Series, 1874

in possession of the remains of St Dunstan, which had been abstracted from Canterbury after the Danish sack of 1011 and kept in concealment ever since. The Canterbury monks naturally denied the assertion, and the contest continued for centuries. In 1508 Warham and Goldston having examined the Canterbury shrine reported that it contained all the principal bones of the saint, but the abbot of Glastonbury in reply as stoutly maintained that this was impossible. The day of such disputes was, however, drawing to a close. On 1539 the last and 60th abbot of Glastonbury, Robert Whyting, was, in the words of a contemporary letter (MS. Cotton, Cleop. E., iv. fol. 996), "arraigned, and next day put to execution for robbing of Glastonbury church." His body was quartered, and his head fixed on the abbey gate. A darker passage does not occur in the annals of our English Reformation than this murder of an able and high-spirited man, whose worst offence was that he defended as best he could from the hand of the spoiler the property of his charge.¹

The ruins of the abbey are now comparatively few, and as the work of destruction has in many places descended to the very foundations it is impossible to make out the details of the plan. Of the vast range of buildings for the accommodation of the monks almost nothing remains except the abbot's kitchen, noteworthy for its octagonal interior, the porter's lodge, and the abbey barn. Considerable portions are still standing of the so-called chapel of St Joseph at the west end, which Mr Willis has identified with the lady chapel, occupying the site of the old wicker church. This chapel, which is the finest part of the ruins, is transition work of the 12th century. It measures about 66 feet from east to west and about 36 from north to south. Below the chapel is a crypt which Professor Willis shows to be a construction of the 15th century inserted in a building which had no previous crypt. Between the chapel and the great church is an Early English building which appears to have served as a Galilee porch. The great church itself was a cruciform structure with a choir, a nave, and transepts, and a tower surmounting the centre of intersection. From east to west the length was 410 feet, and the breadth of the nave was about 80 feet. The nave had ten severies, and the choir six. Of the nave three bays of the south side are still standing, and the windows have pointed arches externally and semi-circular arches internally. Two of the tower piers and a part of one arch give some indication of the grandeur of the building. The old clock, presented to the abbey by Adam de Godbury (1322-1335), and noteworthy as the first recorded example of a clock striking the hours automatically with a count-wheel, is still preserved, although not in its entirety, in the cathedral at Wells.

The Glastonbury thorn, planted, according to the legend, by Joseph of Arimathea, has been the object of considerable comment. According to Loudon (*Arboretum et Fruticetum*) it was probably *Crategeus precocis*, and he reports that he received from Glastonbury in December 1833 a thorn branch in full blossom, having also on it ripe fruit. The actual thorn visited by the pilgrims was destroyed about the Reformation time, but specimens of the same variety are still extant in various parts of the country.

See William of Malmesbury, "De Antiq. Glastoniensis Ecclesie" in *Rerum Anglicarum Script.* vol. i. 1684 (also printed by Hearne and Migne); John of Glastonbury, *Chronica sive de Hist. de Rebus Glast.*, ed. by Hearne, Oxford, 1726, 2 vols.; Adam of Domerham, *De Rebus Gestis Glast.*, ed. by Hearne, Oxford, 1727, 2 vols.; *Hist. and Antiq. of Glast.*, London, 1807; *Avalonian Guide to the Town of Glastonbury*, 1839, 8th ed.: Warner, *Hist. of the Abbey and Town*, Bath, 1826; Rev. F. Warre, "Glastonbury Abbey," in *Proc. of Somersetshire Archæol. and Nat. Hist. Soc.*, 1849; Rev. F. Warre, "Notice of Ruins of Glastonbury Abbey," *ibid.*, 1859; Rev. W. A. Jones, "On the Reputed Discovery of King Arthur's Remains at Glastonbury," *ibid.*, 1859; Rev. J. R. Green, "Dunstan at Glastonbury," and "Giso and Savaric," *ibid.*, 1863; Rev. Canon Jackson, "Savaric, Bishop of Bath and Glastonbury," *ibid.*, 1862, 1863; E. A. Freeman, "King Ine," *ibid.*, 1872 and 1874; Dr W. Beattie, in *Journ. of Brit. Archæol. Ass.*, vol. xii., 1856; Rev. R. Willis, *Archæological History of Glastonbury Abbey*, 1866. Views and plans of the abbey building will be found, says Mr Willis, in *Dugdale's Monasticon*, 1655; *Stevens's Monasticon*, 1729; *Stukoley, Itinerarium Curiosum*, 1724; *Gosse, Antiquities*, 1754; *Carter, Ancient Architecture*, 1800; *Storr, Antiq. and Topogr. Cabinet*, vol. ii., iv., v., 1807, &c.; *Britton's Architectural Antiquities*, vol. i., 1813; *Vetusta Monumenta*, vol. iv., 1815; and *New Monasticon*, vol. i., 1817.

GLATZ (Slav. *Kladsko*), a fortified town of Prussian Silesia, chief town of a county in the government district of Breslau, is situated 50 miles S.S.W. of the town of that name. It stands in a narrow valley on the left bank of the Neisse, not far from the Austrian frontier. It is strongly walled; and is further defended by an old castle built on a high hill on one side of the town, and by a regular modern fortress erected on a hill on the opposite side. Before the town on both banks of the river there is also a strongly fortified camp, by which its bombardment from the neighbouring heights may be hindered, and which affords accommodation for as many as 10,000 men. The town is the seat of a circle court and of an agricultural union, and

¹ A curious relic of Abbot Whyting, his watch, was purchased in 1837 at the sale of T. Bowen's effects, and presented by C. K. Trynt to the duke of Sussex.

possesses one Lutheran and three Catholic churches, one of which is very old and contains several monuments of Silesian dukes. Among the other buildings the principal are the nunnery, the royal Catholic gymnasium, the asylum for destitute children, and the military hospital. The industries include the manufacture of spirits, linen, damask, broad cloth, hosiery, beads, and leather. Glatz existed as early as the 11th century. In the Thirty Years' War it was several times besieged and taken. It surrendered to Frederick the Great in 1742, was retaken by the Austrians in 1760, and was restored to Prussia at the peace of 1763. The population in 1875 was 12,553.

GLAUBER, JOHANN RUDOLPH (1603-1668), alchemist and medicinal chemist, was born at Carlstadt in 1603, and died at Amsterdam in 1668. There is no authentic record of details concerning his life; his name has been somewhat marred by tradition, but it is not unreasonable to suppose that this originated with persons who did not heed the warning given by the chemist himself, in one of his more important memoirs, "let no one rashly judge of this work, until he be thoroughly informed concerning the same." Commencing his career as a chemist at the time he did, it was not unnatural that he imbibed the notion, prevalent among his contemporaries, of the existence of "alkaheem," a liquid which was to be universal in its uses as a solvent and a medicine, and of the "philosopher's stone." But whatever the motive which induced him to toil in his laboratory, it is certain that he, by ascertaining the preparation of many valuable medicines, contributed largely to pharmacy. He undoubtedly was the first, in 1648, to procure hydrochloric acid by the action of oil of vitriol on common salt, and also in all probability to obtain nitric acid by means of oil of vitriol and nitre. Sodium sulphate, discovered by him, and commonly therefore termed Glauber's salt (see below), he obtained by the action of oil of vitriol on salt.

His treatises, about thirty in number, were published at Frankfurt in 2 vols. 4to, in 1658-1659; at Amsterdam, in 1661, in 7 vols. 8vo; and at London, translated into English by Parke, in 1689, 1 vol. folio.

GLAUBER'S SALT, the popular term for neutral sulphate of sodium (Na_2SO_4), discovered by the chemist whose name it bears, and formerly known as "sal mirabile Glauberi." It occurs in nature in combination with calcium sulphate as the mineral glauberite, and uncombined in right rhombic prisms, as thenardite, being found in this form in Bolivia and Peru, and near Madrid; or in monoclinic prisms, with ten molecules of water as glauberite or ordinary Glauber's salt, in Austria, Hungary, Italy, and in great quantity as a deposit from the hot springs of Carlsbad. It is also a constituent of sea-water, and the chief active principle of medicinal waters, and occurs in minute traces in the blood. It has a bitter but not acrid taste. It is somewhat anomalous in its solubility, the maximum occurring at about 34° C. According to Löwel, it exists in aqueous solution at temperatures as high as 34° C. as a decahydrate, but above that temperature as an anhydride, the solubility of the former increasing, and of the latter decreasing, with a rise of temperature (see CHEMISTRY, vol. v. p. 505). Under ordinary circumstances it crystallizes from solution in large colourless prisms; these, when exposed to the air or heated, effloresce, giving a white powder, which melts at a strong red heat, and on cooling forms a transparent mass. The salt has also been the subject of some interesting experiments made by Guthrie, who at -7° C. procured it in combination with 166 molecules of water. From his investigation of this and other substances, he concluded that the solution of a solid body consists in the formation of a liquid hydrate which ultimately diffuses into the rest of the solvent. In the manufacture of sodium carbonate from salt and sulphuric acid, this sulphate is prepared in large quantities. In medicine it is employed as a purgative.

GLAUCHAU, one of the most important manufacturing towns of Saxony, circle of Zwickau, is situated on the right bank of the Mulde, 7 miles north of Zwickau and 17 west of Chemnitz. It is the seat of a royal administrative commission, of a district court, and of the ecclesiastical and secular courts of the countship of Schönburg. Its principal manufactures are woollen and half-woollen goods, in regard to which it occupies the first position in Germany. Besides 3000 hand-loom and 1000 power-loom in the town, the trade gives employment to many others in the neighbouring districts. There are also dyeworks, print works, and manufactories of paper, linen, thread, and machinery. Glauchau possesses a real school, an elementary school, a weaving school of the higher grade, an orphanage, and an infirmary. Some portions of the extensive old castle date from the 12th century, and the Gottesacker church contains interesting antiquarian relics. Glauchau was founded by a colony of Sorbs and Wends, and belonged to the lords of Schönburg as early as the 12th century. The mineralogist Agricola was born at Glauchau in 1494. While the population in 1834 was only 6292, it was 14,357 in 1858 and 21,743 in 1875.

GLAUCUS (Γλαυκος, *i.e.*, γλαυκος, "silvery" or "sheeny"), in Greek mythology, the name of several figures, the most important of which are the four described below:—

(1.) GLAUCUS, surnamed Pontius (ὁ πόντιος, equivalent to ὁ θαλάσσιος), according to the common legend had originally been an expert fisherman and diver at Anthedon (Bœotia), but, having eaten of the magical herb sown by Cronos, had leapt into the sea, where ultimately he was changed into a god, and endowed with the gift of unerring prophecy. A principal seat of his cultus was Anthedon, where the inhabitants claimed to be descended from him; but he was also worshipped extensively, not only on the coasts of Greece, but also on those of Sicily and Spain, it being customary for fishermen and sailors at certain seasons to watch during the night for the moment when he should come on his periodical rounds accompanied by his train, in order that they might consult him as an oracle. He is generally represented as endowed with most of the attributes of Nereus, but occasionally he is identified with Melicertes. He is sometimes said to have instructed Apollo in prophecy. In art he is depicted as a vigorous old man with long hair and beard, his body terminating in a scaly tail. The *Argonautica* represent Glaucus as having been builder and steersman of the "Argo," as having alone remained unhurt in the fight of Jason with the Tyrrhenians, and as having afterwards become a sea god, in which capacity he was able in various ways to assist the expedition. A poetical account of his metamorphosis is given by Ovid (*Met.*, xiii. 906), and his story has been also treated by Pindar and by Æschylus, the latter of whom is known to have made Glaucus Pontius the subject of one of his satyr-dramas (see Pausanias, ix. 22, 6; and compare Hermann, *De Æschyli Glaucois*). Allusions to the loves of Glaucus with Ariadne, Scylla, the Nereids, and Melicertes are frequently to be met with in ancient literature; and a considerable quantity of folklore concerning him will be found in the scholiast on Plato's *Republic*, p. 536, and also in Athenæus, *Deipnosoph.* vii. 47, 48. See also Gädechen's monograph (*Glaukos der Meer-gott*, 1860).

(2.) GLAUCUS, usually surnamed Potnieus (ὁ ποτνιαίος), from Potniæ near Thebes, a deity worshipped chiefly in Corinth, is to be carefully distinguished from Glaucus Pontius. He was the son of Sisyphus by Merope, and the father of Bellerophon. According to the legend he was destroyed by his own mares,—the most common form of the story being that he was torn to pieces by them. Accounts differ as to the place of his violent death, and also as to the

immediate occasion of it. Sometimes it is represented as having happened at Iolcus, at the funeral games of Pelias, but usually the scene is laid at Potniæ. He is most frequently represented as having offended Aphrodite by having kept his mares from breeding; but other versions of the myth are that he had fed them on human flesh to make them more spirited, or that they had been suffered to drink at a sacred well at Bœotia, or that they had eaten the herb hippomanes. On the isthmus of Corinth, and also at Olympia and Nemea, he was worshipped as ταραξίππος; and he was the subject of a lost tragedy of Æschylus. His affinities with Poseidon Hippius are obvious; and it may be taken for granted that the frantic horses of Glaucus Potnieus represent the stormy waves of the sea, just as Glaucus Pontius is himself a personification of the ocean in its friendlier and calmer moods.

(3.) GLAUCUS, the son of Minos by Pasiphae, when a child, playing at ball or pursuing a mouse, fell into a honey pot and was smothered. His father, after a vain search for him, consulted the oracle, and was referred for an answer to the person who should suggest the aptest comparison for one of the cows of Minos which had the power of assuming three different colours. Polyidus (Πολύιδος) of Argos, who had likened it to a mulberry (or bramble), which changes from white to red and then to black, soon afterwards discovered the child. Minos then desired him to restore young Glaucus to life; and on his failure in this, he was sentenced to be entombed alive along with the corpse. Having in the sepulchre killed a serpent by which he had been attacked, he saw its companion revivify it by laying upon it a few leaves of a certain herb. The same herb he successfully applied to Glaucus. This curious myth is now very generally admitted to be of a solar character; but interpreters are far from unanimous as to the significance of the various details. The story, which is related by Apollodorus (iii. 3, 1), and also by Ælianus, was a favourite subject with poets and artists. Æschylus, Sophocles, and Euripides are each of them said to have treated it dramatically; and, according to Lucian, it was often represented in mimic dances (Lucian, *De Saltatione*, 49; Welcker, *Die Griech. Tragödie*). In some of its features at least the mythus is found to be very widely diffused. See Cox, *Aryan Mythology*, i. 161; Baring-Gould, *Myths of the Middle Ages*, ii. 145.

(4.) GLAUCUS, son of Hippolochus, and grandson of Bellerophon, mythical progenitor of the kings of Ionia, was a Lycian prince who, along with his brother Sarpedon, assisted Priam in the Trojan war. The incident between Glaucus and Diomedes, as related in the *Iliad*, is well known. He was afterwards slain by Ajax; but his body was carried back to Lycia, as that of his brother had been. It seems probable that these two sons of the Lycian land—the land of light—who leave it in youth, but are carried thither again (by Hypnos and Thanatos) when their course is done, originally were meant to represent respectively the creeping light of the early dawn (Sarpedon) and the brightness of the open day (Glaucus).

GLEBE, in ecclesiastical law, is the land devoted to the maintenance of the incumbent of a church. Burn (*Ecclesiastical Law*, s.v. "Glebe Lands") says:—"Every church of common right is entitled to house and glebe, and the assigning of them at the first was of such absolute necessity that without them no church could be regularly consecrated. The house and glebe are both comprehended under the word *manse*, of which the rule of the canon law is, *sancitum est ut unicuique ecclesie unus mansus integer absque alio servitio tribuatur*." In the technical language of English law the fee-simple of the glebe is said to be in *abeyance*, that is, it exists "only in the remembrance, expectation, and intendment of the law." But the freehold is in the parson.

although at common law he could alienate the same only with proper consent,—that is, in his case, with the consent of the bishop. The disabling statutes of Elizabeth (1 Eliz. c. 19, and 13 Eliz. c. 10) made void all alienations by ecclesiastical persons, except leases for the term of twenty-one years or three lives. As to exchange of glebe lands, see 5 and 6 Vict. c. 54, and 17 and 18 Vict. c. 84. In Scotch ecclesiastical law, the manse now signifies the minister's dwelling-house, the glebe being the land to which he is entitled in addition to his stipend. All parish ministers appear to be entitled to a glebe, except the ministers in royal burghs proper, who cannot claim a glebe unless there be a landowner's district annexed; and even in that case, when there are two ministers, it is only the first who has a claim. See Bell's *Dictionary and Digest*.

GLEE is a musical term for a part song of a particular kind. The word, as well as the thing, are essentially confined to England. The technical meaning has been explained in different ways; but there is little doubt of its derivation from the Anglo-Saxon "gleov, gleo," *gaudium, delectamentum*, and hence *ludus musicus*. Glee-man, Anglo-Saxon "gleo-man," is translated simply as "musicus" or "cantor," to which the less distinguished titles of "mimus, jocista, scurra," are frequently added in old dictionaries. The accomplishments and social position of the gleeman seem to have been as varied as those of the Provençal "joglar." To return to the word "glee," there are early examples of its being used as synonymous with harmony or concerted music. The former explanation, for instance, is given in the *Promptorium Parvulorum*, a work of the 15th century. Glee in its present meaning signifies, broadly speaking, a piece of concerted vocal music, generally unaccompanied, and for male voices, though exceptions are found to the last two restrictions. The number of voices ought not to be less than three. As regards musical form, the glee is little distinguished from the catch,—the two terms being often used indiscriminately for the same song; but there is a distinct difference between it and the madrigal—one of the earliest forms of concerted music known in England. While the madrigal does not show a distinction of contrasted movements, this feature is absolutely necessary in the glee. In the madrigal the movement of the voices is strictly contrapuntal, while the more modern form allows of freer treatment and more compact harmonies. Differences of tonality are fully explained by the development of the art, for while the madrigal reached its acme in Queen Elizabeth's time, the glee proper was little known before the Commonwealth; and its most famous representatives belong to the last century and the first quarter of the present. Among the numerous collections of the innumerable pieces of this kind, only one of the earliest and most famous may be mentioned, *Catch that Catch can*, a *Choice Collection of Catches, Rounds, and Canons, for three and four voices*, published by John Hilton in 1652. The name "glee," however, appears for the first time in John Playford's *Musical Companion*, published twenty-one years afterwards, and reprinted again and again, with additions by later composers—Henry Purcell, William Croft, and John Blow among the number. The father of the glee in its modern form is Dr Arne, born in 1710. Among more recent English musicians famous for their glees, catches, and part-songs, the following may be mentioned:—Attwood, Boyce, Bishop, Crotch, Callcott, Shield, Stevens, Horsley, Webb, and Knyvett. The convivial character of the glee led, in the last century, to the formation of various societies, which offered prizes and medals for the best compositions of the kind, and assembled for social and artistic purposes. The most famous amongst these—The Glee Club—was founded in 1783, and at first used to meet at

the house of Mr R. Smith, in St Paul's Churchyard. This club was dissolved in 1857. A similar society—The Catch Club—was formed in 1761, and is still in existence. A short historic survey of the subject is contained in Mr W. A. Barrett's *The English Glee and Madrigal Writers*.

GLEIG, GEORGE (1753–1839), bishop of Brechin, Scotland, was the son of a farmer, and was born at Boghall, Kincardineshire, May 12, 1753. He received his early education at the school of Arbutnott, and at the age of thirteen entered King's College, Aberdeen, where he especially distinguished himself in mathematics and the moral and physical sciences. In his twenty-first year he took orders in the Scottish Episcopal Church, and was ordained to the pastoral charge of a congregation at Pittenweem, Fife, whence he removed in 1790 to Stirling. His pastoral duties allowing him considerable leisure for literary pursuits, he became a frequent contributor to the *Monthly Review*, the *Gentleman's Magazine*, the *Anti-Jacobin Review*, and the *British Critic*. He also wrote several articles for the third edition of the *Encyclopædia Britannica*, and on the death of the editor, Colin Macfarquhar, in 1793, was engaged to edit the remaining volumes. One of his principal contributions to this work was the article *Metaphysics*. He was twice chosen bishop of Dunkeld, but the opposition of the primus rendered the election on both occasions ineffectual. In 1808 he was consecrated assistant and successor to the bishop of Brechin, in 1810 was preferred to the sole charge, and in 1816 was elected primus of the Episcopal Church of Scotland, in which capacity he greatly aided in the introduction of many useful reforms, in fostering a more catholic and tolerant spirit, and in cementing a firm alliance with the sister church of England. He died at Stirling in February 1839.

Besides various sermons, Gleig was the author of *Directions for the Study of Theology*, 1827; an edition of *Stackhouse's History of the Bible*, 1817; and a life of Robertson the historian, prefixed to an edition of his works. See *Life of Bishop Gleig* by the Rev. W. Walker, 1879.

GLEIM, JOHANN WILHELM LUDWIG (1719–1803), a minor German poet, was born April 2, 1719, near Halberstadt, and died there February 18, 1803, after having occupied, during half a century, the situation of secretary to the chapter of Halberstadt. "Father Gleim" was the title accorded to him throughout all literary Germany on account of his kind-hearted though inconsiderate and indiscriminating patronage alike of the poets and poetasters of the period. He wrote a large number of feeble imitations of Anacreon, Horace, and the minnesingers, a dull didactic poem entitled *Halladat oder das rothe Buch* (Halberstadt, 1774, 4th ed. 1812), and collections of fables and romances (*Fabeln*, Berlin, 1756–57; *Romanzen*, Berlin and Leipsic, 1756; *Lieder, Fabeln, und Romanzen*, Berlin, 1758). Of higher merit are his *Preussische Kriegslieder eines Grenadiers* (Berlin, 1758). These, which were inspired by the campaigns of Frederick II., are often distinguished by genuine feeling and vigorous force of expression. They are also noteworthy as being the first of that long series of noble political songs in which later German literature is so rich. With this exception, Gleim's writings are for the most part tamely commonplace in thought and expression. His very best odes have only a certain feeble prettiness to recommend them. A few, as *Das Hütchen* and *An Leukon*, have still some popularity, and appear in most collections of German poetry.

See Gleim's *Sämmtliche Werke* (7 vols., Halberstadt, 1811–1813), and Körte's *Gleim's Leben aus seinen Briefen und Schriften* (Halberstadt, 1811).

GLEIWITZ, a town in the Prussian province of Silesia, chief town of the circle of Tost-Gleiwitz, government district of Oppeln, is situated on the Klodnitz, and on the railway between Oppeln and Cracow, 40 miles S.E. of the

former town. It is the seat of a royal mining board, a provincial court of justice, and a tax office. It possesses one Protestant and two Catholic churches, a synagogue, a gymnasium, a school of industry, two female schools of a higher grade, a convent, a hospital, an infirmary, two orphanages, and a barracks. Gleiwitz is the centre of the iron industry of Upper Silesia. Besides the royal foundry, with which are connected machine manufactories and boiler-works, there are other two foundries, meal mills, and manufactories of wire, gaspipes, cement, and paper. The population in 1875 was 14,156.

GLENDOWER, or GLYNDWR, OWEN, the last native who assumed the title of Prince of Wales, and the leader of the only formidable attempt made by the Welsh to regain their freedom, after they had been subjugated by Edward I., was born most probably at Glyndwr in Montgomeryshire, whence his name, about the year 1354. He was the son of Gruffydd Vychan, sprung from the lords of Bromfield, and through his mother he claimed descent from a daughter of Llywelyn, the last crowned prince of Wales. He was entered a member of one of the inns of court, and brought up to the profession of the law, but he does not seem to have practised. In 1385, in the great dispute between the Grosvenors and the Scropes as to their right to bear a certain coat of arms, he was a witness for Grosvenor—one of the witnesses for Scrope being the poet Chaucer. He found his way to court, where he became a favourite with King Richard, and was made an esquire of his body. When Richard went to Ireland Owen accompanied him, as he did also on his return to Wales. He was present when Richard placed himself in the hands of the treacherous Northumberland, and at Flint, where his deposition was decided upon. Owen thereupon retired into private life. He had the misfortune to have for a neighbour Reginald de Grey, earl of Ruthin; and between him and De Grey a feud existed, occasioned by a dispute about a piece of waste land. In the time of Richard, Owen was successful in a lawsuit; but no sooner was the king deposed than De Grey took forcible possession of the land. Owen in vain appealed to parliament, although the bishop of St Asaph entreated them to grant his request, and warned them that if they did not, Wales would rise in rebellion; and a little later Henry IV., on the ground that Owen, as a crown tenant, had neglected to join an expedition to Scotland (while the fact was that the summons, which had been entrusted to De Grey to give to Owen, was not delivered until it was too late), declared a forfeiture of his land held of the crown, and granted some of it to De Grey. With armed retainers De Grey took possession; but Owen mustered his followers, and after regaining his own devastated lands of De Grey, Henry took De Grey's part, and Owen set both at defiance. On the 20th September 1400 Owen struck the first blow for the freedom of his country at Ruthin, where a fair was being held. The town was burnt down. During that and the following year Owen steadily added to his strength, and the king, although he thrice invaded Wales at the head of a large army, failed to get at the enemy, who retired to the mountain fastnesses. This, and the stormy weather which the English seem to have invariably experienced, so awed them that they thought the Welsh chieftain was allied with the powers of darkness. Harsh laws were enacted against the Welsh, who thereby were only the more goaded to rebellion. The lord-marchers sided with the king, and Sir Edward Mortimer, uncle of the earl of March, gave Owen battle at Brynglas in Radnorshire, on June 22, 1402. 1100 Herefordshire men were left dead on the field, and Mortimer himself was made prisoner. It was at this battle that the Welsh women were guilty, as Shakespeare says, of inhuman conduct to the dead. This so alarmed the king that

he invaded Wales in the autumn with three armies, but nothing came of it. At a parliament held at Machynlleth, at the close of this year (1402), Owen was formally proclaimed Prince of Wales. About this time it was that the first steps were taken which secured the league between Owen, Mortimer, and Percy. Early in 1403 Prince Henry—Falstaff's Hal—was appointed lieutenant of the king in Wales. He led an army into North Wales and destroyed Owen's residences, "and laid waste a fine and populous country." The next great event was the battle of Shrewsbury, at which Percy was defeated. Glendower has been accused of having neglected aid to his ally at this battle, but letters recently discovered exonerate him from blame in this respect, as he was elsewhere at the time. Meanwhile Owen was committing terrible ravages in the districts under the sway of the marchers, or where Norman castles overawed the natives; and in 1404 he sent ambassadors—his chancellor Griffith Young, and his brother-in-law John Hanmer—to Charles of France, who entered into treaty to aid Owen. In pursuance of this treaty a large force, under the command of Hugueville, landed at Milford Haven at the end of July 1405. But meanwhile Owen had sustained two crushing defeats from the army under Prince Henry, the first at Grosmont in Monmouthshire on the 11th March, and the second at Mynyddpwllmelin in Brecknockshire four days later. Still he was able to muster a force to join the French contingent, and with them he pushed on to the neighbourhood of Worcester, where the king met them but did not fight, and the French returned home. Owen's power appears to have suffered irrevocably at the defeats of the spring. For years afterwards he carried on a desultory warfare, but defections from his ranks so weakened his power that he was no longer the dangerous enemy he had been. But he never submitted. In July 1415—fifteen years after the first outbreak—the king, now Henry V., authorizes Sir Gilbert Talbot to treat with Owen, and to offer him and his followers free pardon, "in case they should desire it." A similar offer was made in February 1416. His death is believed to have taken place at the house of one of his daughters in Monmouthshire, but there is no certainty as to either the date or the place of his death.

GLEYSRE, MARC CHARLES GABRIEL (1806–1874), a celebrated French painter, was of Swiss origin, having been born at Chevilly in the canton of Vaud, May 2, 1806. His father died, and then his mother, while he was yet a boy of some eight or nine years of age; and he was brought up by an uncle at Lyons, who sent him to the industrial school of that city. Going up to Paris a lad of seventeen or nineteen, he spent four years in close artistic study—in Hersent's studio, in Suisse's academy, in the galleries of the Louvre. To this period of laborious application succeeded four years of meditative inactivity in Italy, where he became acquainted with Horace Vernet and Léopold Robert; and six years more were consumed in adventurous wanderings in Greece, Egypt, Nubia, and Syria. At Cairo he was attacked with ophthalmia, and in the Lebanon he was struck down by fever; and he returned to Lyons in shattered health. On his recovery he proceeded to Paris, and, fixing his modest studio in the Rue de Université, began carefully to work out the conceptions which had been slowly shaping themselves in his mind. Mention is made of two decorative panels—Diana leaving the Bath, and a Young Nubian—as almost the first fruits of his genius; but these did not attract public attention till long after, and the painting by which he practically opened his artistic career was the Apocalyptic Vision of St John, sent to the Salon of 1840. This was followed in 1843 by Evening, which at the time received a medal of the second class, and afterwards became widely popular under the title of the Lost

Illusions. It represents a poet seated on the bank of a river, with drooping head and wearied frame, letting his lyre slip from a careless hand, and gazing sadly at a bright company of maidens whose song is slowly dying from his ears as their boat is borne slowly from his sight. In spite of the success which attended these first ventures, Gleyre retired from public competition, and spent the rest of his life in quiet devotion to his own artistic ideals, neither seeking the easy applause of the crowd, nor turning his art into a means of aggrandizement and wealth. After 1845, when he exhibited the Separation of the Apostles, he contributed nothing to the Salon except the Danse of the Bacchantes in 1849. And yet he laboured steadily and was abundantly productive. He had an "infinite capacity of taking pains," and when asked by what method he attained to such marvellous perfection of workmanship, he would reply, "En y pensant toujours." A long series of years often intervened between the first conception of a piece and its embodiment, and years not unfrequently between the first and the final stage of the embodiment itself. A landscape was apparently finished; even his fellow artists would consider it done; Gleyre alone was conscious that he had not "found his sky." Happily for French art this high-toned laboriousness became influential on a large number of Gleyre's younger contemporaries; for when Delaroche gave up his studio of instruction he recommended his pupils to apply to Gleyre, who at once agreed to give them lessons twice a week, and characteristically refused to take any fee or reward. By instinct and principle he was a confirmed celibate: "Fortune, talent, health,—he had everything; but he was married," was his lamentation over a friend. Though he lived in almost complete retirement from public life, he took a keen interest in politics, and was a voracious reader of political journals. For a time, indeed, under Louis Philippe, his studio had been the rendezvous of a sort of liberal club. To the last—amid all the disasters that befell his country—he was hopeful of the future, "la raison finira bien par avoir raison." It was while on a visit to the Retrospective Exhibition, opened on behalf of the exiles from Alsace and Lorraine, that he suddenly dropped down and expired May 5, 1874. He left unfinished the Earthly Paradise, a noble picture, which Taine has described as "a dream of innocence, of happiness, and of beauty—Adam and Eve standing in the sublime and joyous landscape of a paradise enclosed in mountains,"—a worthy counterpart to the Evening. Among the other productions of his genius are the Deluge, which represents two angels speeding above the desolate earth, from which the destroying waters have just begun to retire, leaving visible behind them the ruin they have wrought; the Battle of the Lemnus, a piece of elaborate design, crowded but not cumbered with figures, and giving fine expression to the movements of the various bands of combatants and fugitives; the Prodigal Son, in which the artist has ventured to add to the parable the new element of mother's love, greeting the repentant youth with a welcome that shows that the mother's heart thinks less of the repentance than of the return; Ruth and Boaz; Ulysses and Nausicaa; Hercules at the feet of Omphale; the Young Athenian, or, as it is popularly called, Sappho; Minerva and the Nymphs; Venus *πάρθημος*; Daphnis and Chloe; and Love and the Parcae. Nor must it be omitted that he left a considerable number of drawings and water-colours, and that we are indebted to him for a number of portraits, among which is the sad face of Heine, engraved in the *Revue des Deux Mondes* for April 1852. In Clément's catalogue of his works there are 683 entries, including sketches and studies. Gleyre is in great favour in Switzerland; and a special exhibition of his works was held at Lausanne in the Arland Museum, August and September 1874.

See Fritz Berthoud in *Bibliothèque Universelle de Genève*, 1874; Albert de Montet, *Dict. Biographique des Genevois et des Vaudois*, 1877; and *Vie de Charles Gleyre*, 1877, written by his friend, Charles Clément, and illustrated by 30 plates from his works.

GLINKA, FEDOR NIKOLAEVICH (1788–1849), a Russian poet and author, was born at Smolensk in 1788, and was specially educated for the army. In 1803 he obtained a commission as an officer, and two years later took part in the Austrian campaign. His tastes for literary pursuits, however, soon induced him to leave the service, whereupon he withdrew to his estates in the government of Smolensk, and subsequently devoted most of his time to study or travelling about Russia. Upon the invasion of the French in 1812, he re-entered the Russian army, and remained in active service until the end of the campaign in 1814. Upon the elevation of Count Milorodovich to the military governorship of St Petersburg, Glinka was appointed colonel under his command. On account of his suspected revolutionary tendencies he was, in 1826, banished to Petrozavodsk, but he nevertheless retained his honorary post of president of the Society of the Friends of Russian Literature, and was after a time allowed to return to St Petersburg. Soon afterwards he retired completely from public life, and died on his estates in 1849.

Glinka's martial songs have special reference to the Russian military campaigns of his time. He is known also as the author of the descriptive poem *Kareliya, &c. (Carélia, or the Captivity of Martha Jermovna)*, 1830, and of a metrical paraphrase of the book of Job. His fame as a military author is chiefly due to his *Pisma Russkago Ofitsera (Letters of a Russian Officer)*, 8 vols., 1815–16.

GLINKA, MICHAEL IVANOVICH (1804–1857), a celebrated Russian composer, was born at Novospassky, a village in the Smolensk government, in 1804, and not, as stated generally in the dictionaries, in 1803. His early life he spent at home, but at the age of thirteen we find him at the Blagorodney Pension, St Petersburg, where he studied music under Carl Maier and John Field, the celebrated Irish composer and pianist, settled in Russia. We are told that in his seventeenth year he had already begun to compose romances and other minor vocal pieces; but of these nothing now is known. His thorough musical training did not begin till the year 1830, when he went abroad and stayed for three years in Italy, to study the works of old and modern Italian masters. His thorough knowledge of the requirements of the voice may be connected with this course of study. His training as a composer was finished under Dehn, the celebrated contrapuntist, with whom Glinka stayed for several months at Berlin. In 1833 he returned to Russia, and devoted himself to operatic composition. On November 27, 1836, took place the first representation of his *Life for the Czar*. This was the turning point in Glinka's life,—for the work was not only a great success, but in a manner became the origin and basis of a Russian school of national music. Subject and music combined to bring about this issue. The story is taken from the invasion of Russia by the Poles early in the 17th century, and the hero is a peasant who sacrifices his life for the czar. Glinka has wedded this patriotic theme to inspiring and in some places admirable music. His melodies, moreover, show distinct affinity to the popular songs of the Russians, and for that reason the term "national" may be justly applied to them. His appointment as imperial chapel-master and conductor of the opera of St Petersburg was the just reward of his dramatic successes. His second opera, *Ruslan and Lyudmila*, founded on Poushkin's poem, did not appear till 1842; but in the meantime he wrote an overture and four entre-actes to Kukolnik's drama *Prince Kholmisky*. In 1844 he went abroad for a second time, and lived chiefly in Paris and Spain. On his return to St Petersburg he wrote and arranged several pieces for the orchestra, amongst which the so-called *Kamarinskaya* has achieved popularity beyond the

limits of Russia. He also composed numerous songs and romances. In 1857 he went abroad for the third time, and died suddenly at Berlin, on February 14th of that year.

GLINKA, SERGY NIKOLAEVICH (1774-1847), Russian author, the elder brother of Fedor N. Glinka (noticed above), was born at Smolensk in 1774. In 1796 he entered the Russian army, but after three years' service retired with the rank of major. He afterwards employed himself in the education of youth and in literary pursuits, first in the Ukraine, and subsequently at Moscow, where he died in 1847. His poems are spirited and patriotic; he wrote also several dramatic pieces, and translated Young's *Night Thoughts*.

Among his numerous prose works the most important from an historical point of view are—*Russkoe Chtenie* (*Russian Reading: Historical Memorials of Russia in the 18th and 19th Centuries*), 2 vols., 1845; *Istoriya Rossii*, &c. (*History of Russia for the use of Youth*), 10 vols., 1817-19 (2d ed. 1822; 3d ed. 1824); *Istoriya Armaniya*, &c. (*History of the Migration of the Armenians of Azerbaijan from Turkey to Russia*), 1831; and his contributions to the *Russky Vjestnik* (*Russian Messenger*), a monthly periodical, edited by him from 1808 to 1820.

GLOBE. With the exception of illuminated portolani, the most interesting monuments of geography are globes. Celestial globes are much more ancient than terrestrial ones. The earliest of these with which we are acquainted is one made of copper engraved in the Arab-Cufic character of the 11th century. It is preserved in the Bibliothèque Nationale de Paris, Sect. Géog., No. 396 (see fig. 1). In Italy the

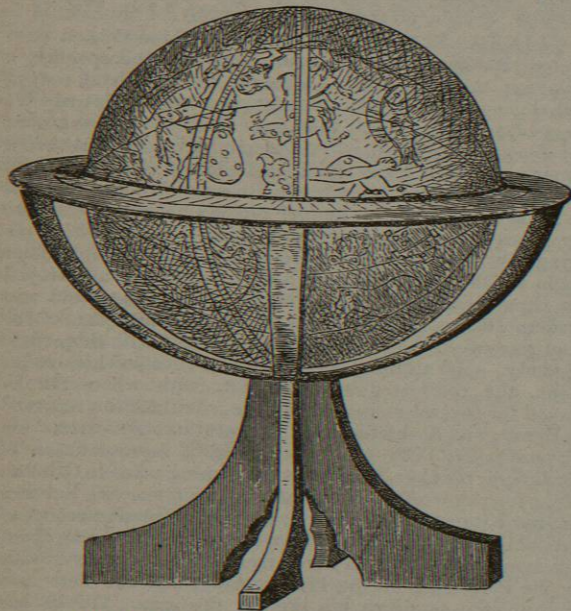


FIG. 1.—Globe in Bibliothèque Nationale, Paris.

emperor Frederick II. (1197-1250) possessed a celestial globe of gold, probably also of Arab manufacture, on which the stars were indicated by pearls; from the scanty information that has come down to us respecting it we should imagine that it partook somewhat of the nature of an armillary sphere, as representations of the planets were to be seen in the interior of it. To these succeed a series of globes ranging from the 15th to the 17th century.

One might suppose that many specimens of these globes would exist in public libraries, but diligent research has shown that the majority of those not made of metal are more perishable than maps, and meet more so than books.

The earliest terrestrial globe of any importance known to geographers is the well known one of Martin Behaim of Nuremberg, bearing the date of 1492. It is about 21 inches in diameter, and is made of pasteboard covered with parchment, on which are designed historical pictures with their legends written in Old German in various colours. The first meridian passes through Madeira, and the only other lines on it are those of the equator, the two tropics, and the polar circles. It has also a meridian of iron and an horizon of brass, but these were not added until 1500, which date they bear. As a monument of geography it is of the highest importance, being the only original document that has come down to us in this form embodying the geographical views of its author with those of his gifted contemporaries, Toscanelli, Columbus, &c. This globe represents with some slight modifications most of the disproportions of the Ptolemaic geography, into which is incorporated information evidently derived from the travels of Marco Polo and Sir J. Maundeville. It was executed by Behaim, assisted by Holtzschuer, while on a visit to his native city (1491-3), after a sojourn of five years at the Azores. It is still preserved in the house of his ancestors at Nuremberg. An exact and authenticated facsimile of it, mounted on a stand, is preserved in the Bib. Nat. de Paris, Section Géographique, No. 393.¹

The Laon globe of 1493, in the possession of M. Leonce Leroux of the Administration Centrale de la Marine à Paris, is made of red copper engraved, about the size of a 36-pounder cannon ball, and pierced by a socket which at a former period held an axis. It has all the appearance of having formed part of the apparatus of an astronomical clock. On the globe are engraved many circles. The first meridian, as in the globe of Behaim, passes through Madeira. In the northern hemisphere meridian lines are drawn at every 15th degree; these meridians are again crossed by certain parallels of latitude corresponding somewhat to the seven climates usually found on maps of the period. Neither meridians nor parallels are to be traced on the southern hemisphere. Although this globe bears a legend upon it dated 1493, it is evident that the general geographical information recorded upon it is earlier than that on Behaim's globe by five or six years. In all probability it was that current in Lisbon between the voyage of Diego Cam to the Zaire or Congo river, 1484-5, and that of Bartholomeu Diaz to the Cape of Good Hope in 1487. The author is unknown. A heart-shaped projection of this globe was published in the *Bulletin de la Soc. de Géog. de Paris*, 4me série, tom. 20te, 1860.

In all probability the earliest post-Columbian globe extant is the one now preserved in the Lenox Library, New York. It was found in Paris some twenty-five years ago by Mr Richard M. Hunt, who, upon learning its value, presented it to the Lenox Library, of which he is the architect. This globe is of copper, about 4½ inches in diameter and engraved. It is pierced for an axis, and probably, like the Laon sphere, formed the principal feature of an astronomical clock or armillary sphere. The date assigned to the Lenox globe by Mr Henry Stevens, who first recognized its importance, and had an accurately drawn projection made of it in the Coast Survey Bureau at Washington in 1869, is about 1506-7. A comparison of that projection, now published in reduced facsimile for the first time (see fig. 2), with several contemporary maps and globes, serves to show the accuracy of the date assigned to it, as also to suggest its French origin. The author is unknown.

¹For other reproductions of it see J. C. Doppelmayer, *Historische Nachricht von der Nürnbergischen Mathematik und Künstlern*, Nuremberg, 1780; Dr F. W. Ghillany, *Geschichte des Seefahrers Ritter Martin Behaim*, Nuremberg, 1853; and Jonard, *Monuments de la Géographie*, Paris, 1854.

The next globe that demands attention is the famous one made at Bamberg in 1520 by Johann Schöner, at the cost and charges of his friend Johann Saylor. It was afterwards taken to Nuremberg by Schöner, where it is still preserved in the town library. The importance attached to this globe is that hitherto it has always been regarded as the first of its kind to portray the discoveries in the New World, in combination with the notions that had previously prevailed of the space intervening between Europe and Africa on one side, and the eastern ends of Asia on the other. Schöner in this globe breaks up America into as many islands as possible. Thus North America is shown as one large island. He also represents South America as a large island, to which he applies several names, among which we observe, for the first time on a globe, the name "America." North America was not comprised under the name until a later date. Schöner's globe indicates two great series of North American discoveries, of which one, commencing with the Cabots in 1497, extended by degrees to Canada and Nova Scotia, while the other, commencing with Columbus in 1492, advanced from the Bahamas slowly

northwards to Virginia and New England. Between these two points there remained a region more or less known which on this globe is indicated by open water. In depicting the east coast of Asia and the many islands there, including Japan and Java-major, the author follows the globe of Behaim. By some it has been regarded as a new edition of Behaim. There are in Germany several globes which depict the world nearly in the same manner as Schöner's. One, preserved in the city of Frankfort, bearing the same date (1520), is about 10½ inches in diameter, and has been reproduced by M. Jomard in his *Monuments de la Géographie*, pl. 15 and 16. There is also another in the library of the grand-duke of Weimar. As all these globes give to North and South America the configuration they have in Schöner, Humboldt was of opinion that they all are, with respect to America, copies of an older chart "hidden perhaps in the archives of Italy or Spain."

There is at Nancy a terrestrial globe which is also a geographical curiosity. It is of chased silver gilt, about 6 inches in diameter; the land portions are represented in fine gilding, the water by azure blue enamel. One of the

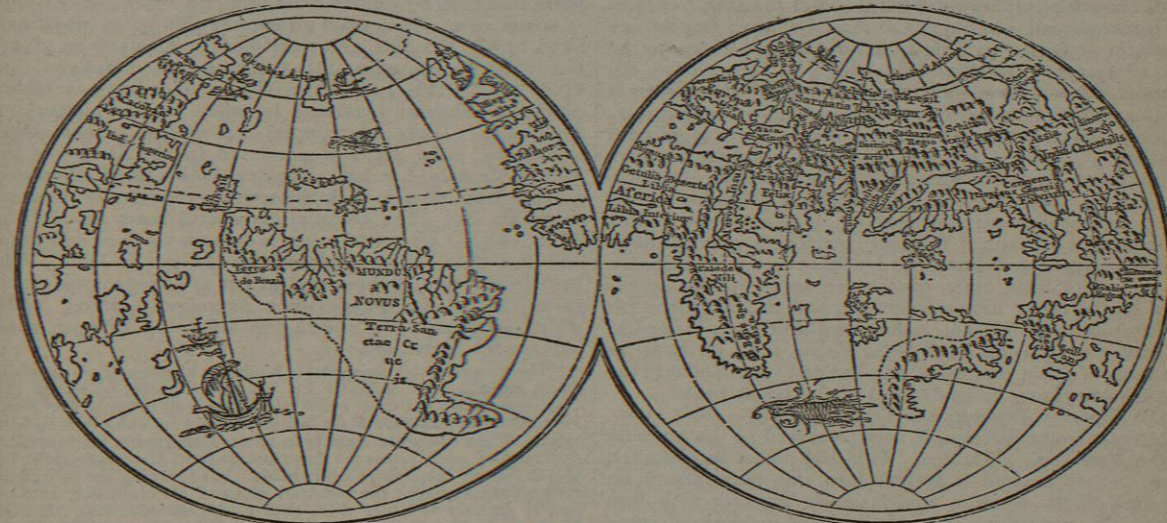


FIG. 2.—Lenox Globe.

hemispheres opens outwards horizontally, the interior being also gilt. It formerly served the purpose of a *pyx* on the altar of the church of Notre-Dame-de-Sion, to which church it was offered by Charles IV., duke of Lorraine, on his return in 1663. It is now preserved in the town library. It has all the appearance of having been made at a period immediately following the execution of the curious heart-shaped map by Oronce Finé of 1531, found in the Paris edition of Grynæus, 1532. In this map and the globe at Nancy we find the New World still regarded as an extension of eastern Asia or the Indies, the geography of Marco Polo being apparently mixed up with that of Cortez in Mexico. A stereographic projection of this globe was published in *Mem. de la Soc. Roy. de Nancy*, vol. viii., 1836.

There is another globe somewhat larger than the preceding, made of copper engraved, known as the De Bure globe. It has no date, but its geographical features in the main bear a close resemblance to the globe at Nancy. It is supposed to be of Spanish origin. It is preserved in the Bib. Nat. de Paris, Section Géographique, No. 427.

In the same section, No. 394, is preserved the Ecuy globe, made of brass. The word "Rhotomagi" (Rouen) is appended to the title, whence it seems to be of French

origin. We have on this globe the first indications of a separation between East Asia and North America. The date appears to be about 1540.

In 1541 the illustrious Gerard Mercator constructed and published at Louvain a terrestrial globe, and in 1551 a companion celestial globe.¹ These are without doubt the most important monuments of the kind of the 16th century. They were to be found in nearly all the universities and libraries of Europe, in the private libraries of the rich, and the class room of the teacher of navigation. We also know from Blundeville's *Exercises* that up to the date of 1592 they were in common use in England. Six pairs at least of these globes were sold for Mercator by Camerarius of Nuremberg; others we know were sold at the book-fairs of Frankfort-on-the-Main; and Mercator himself presented one pair to the university of Louvain, of which he was a student and a master of arts. Yet only two sets of the original globes are known now to exist in Europe—one in the royal library at Brussels, discovered in 1868, the

¹At a later period Mercator also made for Charles V. a pair of globes, the terrestrial one of wood, the celestial one of glass; these were destroyed in the subsequent troubles in the Low Countries.