except where their differences make it necessary; and in giving an account of their common system it will be well to present it at once in its most perfect form. Albert was "the first Scholastic who reproduced the whole philosophy of Aristotle in systematic order with constant reference to the Arabic commentators, and who remodelled it to meet the requirements of ecclesiastical dogma" (Ueberweg, i. 436). On this account he was called by his contemporaries "the Universal Doctor." But in Albert it may be said that the matter was still too new and too multifarious to be thoroughly mastered. The fabric of knowledge is not fitly jointed together in all its parts; the theologian and the philosopher are not perfectly fused into one individual, but speak sometimes with different voices. In St Thomas this is no longer so; the fusion is almost perfect. The pupil, entering into his master's labours, was able from the first to take a more comprehensive survey of the whole field; and in addition he was doubtless endowed with an intellect which was finer, though it might not be more powerful, than his master's. Albert had the most touching affection for his distinguished scholar. When he went to Paris in 1245 to lecture and to take his doctor's degree, his pupil accompanied him; and, on their return to Cologne, Aquinas taught along with his master in the great Dominican school there. At a later date, when Aquinas proceeded to Paris to lecture independently, he occupied the Dominican chair at the same time that Bonaventura held the Franciscan professorship. They received the degree of doctor in the same year, 1257. Rivals in a manner though they were, and differing on points of philosophy, the Angelic and Seraphic Doctors were united in friendship and Christian charity.

"Mysteries" excluded from philosophy.

The monotheistic influence of Aristotle and his Arabian commentators shows itself in Albert and Aquinas, at the outset, in the definitive fashion in which the "mysteries" of the Trinity and the Incarnation are henceforth detached from the sphere of rational or philosophical theology. So long as the Neoplatonic influence remained strong, attempts were still made to demonstrate the doctrine of the Trinity, chiefly in a mystical sense as in Erigena, but also by orthodox churchmen like Anselm. Orthodoxy, whether Catholic or Protestant, has since generally adopted Thomas's distinction. The existence of God is maintained by Albert and Aquinas to be demonstrable by reason; but here again they reject the ontological argument of Anselm, and restrict themselves to the *a posteriori* proof, rising after the manner of Aristotle from that which is prior for us (πρότερον πρὸς ἡμᾶς) to that which is prior by nature or in itself (πρότερον φύσει). God is not fully comprehensible by us, says Albert, because the finite is not able to grasp the infinite, yet he is not altogether beyond our knowledge; our intellects are touched by a ray of his light, and through this contact we are brought into communion with him. God, as the only self-subsistent and necessary being, is the creator of all things. Here the Scholastic philosophy comes into conflict with Aristotle's doctrine of the eternity of the world. Albert and Aquinas alike maintain the beginning of the world in time; time itself only exists since the moment of this miraculous creation. But Thomas, though he holds the fact of creation to be rationally demonstrable, regards the beginning of the world *in time* as only an article of faith, the philosophical arguments for and against being inconclusive.

The question of universals, though fully discussed, no longer forms the centre of speculation. The great age of Scholasticism presents, indeed, a substantial unanimity upon this vexed point, maintaining at once, in different senses, the existence of the universals *ante rem*, *in re*, and *post rem*. Albert and Aquinas both profess the moderate Aristotelian Realism which treats genera and species only as *substantiae secundae*, yet as really inherent in the individuals, and constituting their form or essence. The universals, therefore, have no existence, as universals, *in rerum natura*; and Thomas endorses, in this sense, the polemic of Aristotle against Plato's hypostatized abstractions. But, in the Augustinian sense of ideas immanent in the divine mind, the universal *ante rem* may well be admitted as possessing real existence. Finally, by abstraction from the individual things of sense, the mind is able to contemplate the universal apart from its accompaniments (*animal sine homine, asino, et aliis speciebus*); these subjective existences are the *universalia post rem* of the Nominalists and Conceptualists. But the difficulties which embarrassed a former age in trying to conceive the mode in which the universal exists in the individual reappear in the systems of the present period as the problem of the *principium individuationis*. The universal, as the form or essence of the individual, is called its *quidditas* (its "what-ness" or nature); but, besides possessing a general nature and answering to a general definition (*i.e.*, being a "what"), every man, for example, is this particular man, here and now. It is the question of the particularity or "this-ness" (*haecceitas*, as Duns Scotus afterwards named it) that embarrasses the Scholastics.

The princip. of individuation.

Albert and Aquinas agree in declaring that the principle of individuation is to be found in matter, not, however, in matter as a formless substrate but in determinate matter (*materia signata*), which is explained to mean matter quantitatively determined in certain respects. "The variety of individuals," says Albert, "depends entirely upon the division of matter" (*individuorum multitudo fit omnis per divisionem materiae*); and Aquinas says "the principle of the diversity of individuals of the same species is the quantitative division of matter" (*divisio materiae secundum quantitatem*), which his followers render by the abbreviated phrase *materia quanta*. A tolerably evident shortcoming of such a doctrine is that, while declaring the quantitative determination of matter to be the individual element in the individual, it gives no account of how such quantitative determination arises. Yet the problem of the individual is really contained in this prior question; for determinate matter already involves particularity or this-ness. This difficulty was presently raised by Duns Scotus and the realistically-inclined opponents of the Thomist doctrine. But, as Ueberweg points out, it might fairly be urged by Aquinas that he does not pretend to explain how the individual is actually created, but merely states what he finds to be an invariable condition of the existence of individuals. Apart from this general question, a difficulty arises on the Thomist theory in regard to the existence of spirits or disembodied personalities. This affects first of all the existence of angels, in regard to whom Aquinas admits that they are immaterial or separate forms (*formae separatae*). They possess the principle of individuation in themselves, he teaches, but plurality of individuals is in such a case equivalent to plurality of species (*in eis tot sunt species quot sunt individua*). The same difficulty, however, affects the existence of the disembodied human spirit. If individuality depends in matter, must we not conclude with Averroes that individuality is extinguished at death, and that only the universal form survives? This conclusion, it is needless to say, is strenuously opposed both by Albert and Thomas. Albert wrote a special treatise *De Unitate Intellectus contra Averroistas*, and Thomas in his numerous writings is even more explicit. It is still admissible, however, to doubt whether the hateful consequence does not follow consistently from the theory laid down. Aquinas regards the souls of men, like the angels, as immaterial forms; and he includes in the soul-unit, so to



speak, not merely the *anima rationalis* of Aristotle, but also the vegetative, sensitive, appetitive, and motive functions. The latter depend, it is true, on bodily organs during our earthly sojourn, but the dependence is not necessary. The soul is created by God when the body of which it is the entelechy is prepared for it. It is the natural state of the soul to be united to a body (*Animae prius convenit esse unitam corpori quam esse a corpore separatam*), but being immaterial it is not affected by the dissolution of the body. The soul must be immaterial since it has the power of cognizing the universal; and its immortality is further based by St Thomas on the natural longing for unending existence which belongs to a being whose thoughts are not confined to the "here" and "now," but are able to abstract from every limitation.

Thomism, which was destined to become the official philosophy of the Roman Catholic Church, became in the first instance the accepted doctrine of the Dominican order, who were presently joined in this allegiance by the Augustinians. The Franciscan order, on the other hand, early showed their rivalry in attacks upon the doctrines of Albert and Aquinas. One of the first of these was the *Reprehensorium seu Correctorium Fratris Thomae*, published in 1285 by William Lamarre, in which the Averroistic consequences of the Thomist doctrine of individuation are already pressed home. More important was Richard of Middletown (died about 1300), who anticipated many of the objections urged soon after him by Duns Scotus.

Duns Scotus.

This renowned opponent of the Thomist doctrine was born in the second half of the 13th century, and after achieving an extraordinary success as a lecturer in Oxford and Paris died at an early age in the year 1308. His system is conditioned throughout by its relation to that of Aquinas, of which it is in effect an elaborate criticism. The chief characteristic of this criticism is well expressed in the name bestowed on Duns by his contemporaries—*Doctor Subtilis*. It will be sufficient therefore to note the chief points in which the two great antagonists differ. In general it may be said that Duns shows less confidence in the power of reason than Thomas, and to that extent Erdmann and others are right in looking upon his system as the beginning of the decline of Scholasticism. For Scholasticism, as perfected by Aquinas, implies the harmony of reason and faith, in the sense that they both teach the same truths. To this general position Aquinas, it has been seen, makes several important exceptions; but the exceptions are few in number and precisely defined. Scotus extends the number of theological doctrines which are not, according to him, susceptible of philosophical proof, including in this class the creation of the world out of nothing, the immortality of the human soul, and even the existence of an almighty divine cause of the universe (though he admits the possibility of proving an ultimate cause superior to all else). His destructive criticism thus tended to reintroduce the dualism between faith and reason which Scholasticism had laboured through centuries to overcome, though Scotus himself, of course, had no such sceptical intention. But the way in which he founded the leading Christian doctrines (after confessing his inability to rationalize them) on the arbitrary will of God was undoubtedly calculated to help in the work of disintegration. And it is significant that this primacy of the undetermined will (*voluntas superior intellectu*) was the central contention of the Scotists against the Thomist doctrine. Voluntary action, St Thomas had said, is action originating in self or in an internal principle. As compared with the animals, which are immediately determined to their ends by the instinct of the moment, man determines his own course of action freely after a certain process of rational comparison (*ex collatione quadam rationis*). It is evident that the freedom here spoken of is a freedom from the immediacy of impulse—a freedom based upon our possession of reason as a power of comparison, memory, and forethought. Nothing is said of an absolute freedom of the will; the will is, on the contrary, subordinated to the reason in so far as it is supposed to choose what reason pronounces good. Accordingly, the Thomist doctrine may be described as a moderate determinism. To this Scotus opposed an indeterminism of the extremest type, describing the will as the possibility of determining itself motivelessly in either of two opposite senses. Transferred to the divine activity, Thomas's doctrine led him to insist upon the *perseitas boni*. The divine will is, equally with the human, subject to a rational determination; God commands what is good because it is good. Scotus, on the other hand, following out his doctrine of the will, declared the good to be so only by arbitrary imposition. It is good because God willed it, and for no other reason; had He commanded precisely the opposite course of conduct, that course would have been right by the mere fact of His commanding it. Far removed from actuality as such speculations regarding the priority of intellect or will in the Divine Being may seem to be, the side taken is yet a sure index of the general tendency of a philosophy. Aquinas is on the side of rationalism, Scotus on the side of scepticism.

While agreeing with Albert and Thomas in maintaining the threefold existence of the universals, Duns Scotus attacked the Thomist doctrine of individuation. The distinction of the universal essence and the individualizing determinations in the individual does not coincide, he maintained, with the distinction between form and matter. The additional determinations are as truly "form" as the universal essence. If the latter be spoken of as *quidditas*, the former may be called *haecceitas*. Just as the genus becomes the species by the addition of formal determinations called the difference, so the species becomes the individual by the addition of fresh forms of difference. As *animal* becomes *homo* by the addition of *humanitas*, so *homo* becomes Socrates by the addition of the qualities signified by *Socratitas*. It is false, therefore, to speak of matter as the principle of individuation; and if this is so there is no longer any foundation for the Thomist view that in angelic natures every individual constitutes a species apart. Notwithstanding the above doctrine, however, Scotus holds that all created things possess both matter and form—the soul, for example, possessing a matter of its own before its union with the body. But the matter of spiritual beings is widely different from the matter of corporeal things. In his treatment of the conception of matter, Duns shows that he inclined much more to the Realism which makes for pantheism than was the case with the Aristotelianism of Thomas. A perfectly formless matter (*materia prima*) was regarded by him as the universal substratum and common element of all finite existences. He expressly intimates in this connexion his acceptance of Avicebron's position. *Ego autem ad positionem Avicebronis redeo*, that is, to the Neoplatonically conceived *Fons Vitae* of the Jew Gebirol.

In the end of the 13th century and the beginning of the 14th the Thomists and Scotists divided the philosophical and theological world between them. Among the Thomists may be named John of Paris, Ægidius of Lessines (wrote in 1278), Bernard of Trilia (1240–92), and Peter of Auvergne. More important was Ægidius of Colonna (1247–1316), general of the Augustinian order, surnamed *Doctor Fundatissimus* or *Fundamentarius*. Hervæus Natalis (*ob.* 1323) and Thomas Bradwardine (*ob.* 1349) were determined opponents of Scotism. Siger of Brabant and Gottfried of Fontaines, chancellor of the university of Paris, taught Thomism

at the Sorbonne; and through Humbert, abbot of Prulli, the doctrine won admission to the Cistercian order. Among the disciples of Duns Scotus are mentioned John of Bassolis, Franciscus de Mayronis (*ob.* 1327), Antonius Andreæ (*ob. c.* 1320), John Dumbleton and Walter Burleigh (1275–1357) of Oxford, Nicolaus of Lyra, Peter of Aquila, and others. Henry Goethals or Henry of Ghent (Henricus Gandavensis, 1217–93), surnamed *Doctor Solennis*, occupied on the whole an independent and pre-Thomist position, leaning to an Augustinian Platonism. Gerard of Bologna (*ob.* 1317) and Raoul of Brittany are rather to be ranked with the Thomists. So also is Petrus Hispanus (died 1277 as Pope John XXI.), who is chiefly important, however, as the author of the much-used manual *Summulæ Logicales*, in which the logic of the schools was expanded by the incorporation of fresh matter of a semi-grammatical character. Petrus Hispanus had predecessors, however, in William of Shyreswood (died 1249 as chancellor of Lincoln) and Lambert of Auxerre, and it has been hotly disputed whether the whole of the additions are not originally due to the Byzantine *Synopsis* of Psellus. By far the greatest disciple of Aquinas is Dante Alighieri, in whose *Divina Commedia* the theology and philosophy of the Middle Ages, as fixed by Saint Thomas, have received the immortality which poetry alone can bestow. Two names stand apart from the others of the century—Raymond Lully (1234–1315) and Roger Bacon (1214–94). The *Ars Magna* of the former professed by means of a species of logical machine to give a rigid demonstration of all the fundamental Christian doctrines, and was intended by its author as an unfailing instrument for the conversion of the Saracens and heathen. Roger Bacon was rather a pioneer of modern science than a Scholastic, and persecution and imprisonment were the penalty of his opposition to the spirit of his time.

The last stage of Scholasticism preceding its dissolution is marked by the revival of Nominalism in a militant form. This doctrine is already to be found in Petrus Aureolus (*ob.* 1321), a Franciscan trained in the Scotist doctrine, and in William Durand of St Pourçain (*ob.* 1332), a Dominican who passed over from Thomism to his later position. But the name with which the Nominalism of the 14th century is historically associated is that of the "Invincible Doctor," William of Occam (*ob.* 1347), who, as the author of a doctrine which came to be almost universally accepted, received from his followers the title *Venerabilis Inceptor*. The hypostatizing of abstractions is the error against which Occam is continually fighting. His constantly recurring maxim—known as Occam's razor—is *Entia non sunt multiplicanda praeter necessitatem*. The Realists, he considers, have greatly sinned against this maxim in their theory of a real universal or common element in all the individuals of a class. From one abstraction they are led to another, to solve the difficulties which are created by the realization of the first. Thus the great problem for the Realists is how to derive the individual from the universal. But the whole inquiry moves in a world of unrealities. Everything that exists, by the mere fact of its existence, is individual (*Quaelibet res, eo ipso quod est, est haec res*). It is absurd therefore to seek for a cause of the individuality of the thing other than the cause of the thing itself. The individual is the only reality, whether the question be of an individual thing in the external world or an individual state in the world of mind. It is not the individual which needs explanation but the universal. Occam reproaches the "modern Platonists" for perverting the Aristotelian doctrine by these speculations, and claims the authority of Aristotle for his own Nominalistic doctrine. The universal is not anything really existing; it is a *terminus* or predicable (whence the followers of Occam were at first called Terminists). It is no more than a "mental concept signifying univocally several singulars." It is a natural sign representing these singulars, but it has no reality beyond that of the mental act by which it is produced and that of the singulars of which it is predicated. As regards the existence (if we may so speak) of the universal *in mente*, Occam indicates his preference, on the ground of simplicity, for the view which identifies the concept with the *actus intelligendi* ("une modalité passagère de l'âme," as Hauréau expresses it), rather than for that which treats ideas as distinct entities within the mind. And in a similar spirit he explains the *universalia ante rem* as being, not substantial existences in God, but simply God's knowledge of things—a knowledge which is not of universals but of singulars, since these alone exist *realiter*. Such a doctrine, in the stress it lays upon the singular, the object of immediate perception, is evidently inspired by a spirit differing widely even from the moderate Realism of Thomas. It is a spirit which distrusts abstractions, which makes for direct observation, for inductive research. Occam, who is still a Scholastic, gives us the Scholastic justification of the spirit which had already taken hold upon Roger Bacon, and which was to enter upon its rights in the 15th and 16th centuries. Moreover, there is no denying that the new Nominalism not only represents the love of reality and the spirit of induction, but also contains in itself the germs of that empiricism and sensualism so frequently associated with the former tendencies. St Thomas had regarded the knowledge of the universal as an intellectual activity which might even be advanced in proof of the immortality of the soul. Occam, on the other hand, maintains in the spirit of Hobbes that the act of abstraction does not presuppose any activity of the understanding or will, but is a spontaneous secondary process by which the first act (perception) or the state it leaves behind (*habitus derelictus ex primo actu* = Hobbes's "decaying sense") is naturally followed, as soon as two or more similar representations are present.

William of Occam.

In another way also Occam heralds the dissolution of Scholasticism. The union of philosophy and theology is the mark of the Middle Ages, but in Occam their severance is complete. A pupil of Scotus, he carried his master's criticism farther, and denied that any theological doctrines were rationally demonstrable. Even the existence and unity of God were to be accepted as articles of faith. The *Centiloquium Theologicum*, which is devoted to this negative criticism and to showing the irrational consequences of many of the chief doctrines of the church, has often been cited as an example of thoroughgoing scepticism under a mask of solemn irony. But if that were so, it would still remain doubtful, as Erdmann remarks, whether the irony is directed against the church or against reason. On the whole, there is no reason to doubt Occam's honest adhesion to each of the two guides whose contrariety he laboured to display. None the less is the position in itself an untenable one and the parent of scepticism. The principle of the twofold nature of truth[1] thus embodied in Occam's system was unquestionably adopted by many merely to cloak their theological unbelief; and, as has been said, it is significant of the internal dissolution of Scholasticism. Occam denied the title of a science to theology, emphasizing, like Scotus, its practical character. He also followed his master in laying stress on the arbitrary will of God as the foundation of morality.

[1] This principle appeared occasionally at an earlier date, for example in Simon of Tournay about 1200. It was expressly censured by Pope John XXI. in 1276. But only in the period following Occam did it become a current doctrine.



Nominalism was at first met by the opposition of the church and the constituted authorities. In 1339 Occam's treatises were put under a ban by the university of Paris, and in the following year Nominalism was solemnly condemned. Nevertheless the new doctrine spread on all hands. Dominicans like Armand de Beauvoir (*ob.* 1334) and Gregory of Rimini accepted it. It was taught in Paris by Albert of Saxony (about 1350–60) and Marsilius of Inghen (about 1364–77, afterwards at Heidelberg), as well as by Johannes Buridanus, who was rector of the university as early as 1327. We find, however, as late as 1473 the attempt made to bind all teachers in the university of Paris by oath to teach the doctrines of Realism; but this expiring effort was naturally ineffectual, and from 1481 onward even the show of obedience was no longer exacted. Pierre d'Ailly (1350–1425) and John Gerson (Jean Charlier de Gerson, 1363–1429), both chancellors of the university of Paris, and the former a cardinal of the church, are the chief figures among the later Nominalists. Both of them, however, besides their philosophical writings, are the authors of works of religious edification and mystical piety. They thus combine temporarily in their own persons what was no longer combined in the spirit of the time, or rather they satisfy by turns the claims of reason and faith. Both are agreed in placing repentance and faith far above philosophical knowledge. They belong indeed (Gerson in particular) to the history of mysticism rather than of Scholasticism, and the same may be said of another cardinal, Nicolaus of Cusa (1401–64), who is sometimes reckoned among the last of the Scholastics, but who has more affinity with Scotus Erigena than with any intervening teacher. The title "last of the Scholastics" is commonly given to Gabriel Biel, the summarizer of Occam's doctrine, who taught in Tübingen, and died in the year 1495. The title is not actually correct, and might be more fitly borne by Francis Suarez, who died in 1617. But after the beginning of the 15th century Scholasticism was divorced from the spirit of the time, and it is useless to follow its history further. As has been indicated in the introductory remarks, the end came both from within and from without. The harmony of reason and faith had given place to the doctrine of the dual nature of truth. While this sceptical thesis was embraced by philosophers who had lost their interest in religion, the spiritually minded sought their satisfaction more and more in a mysticism which frequently cast itself loose from ecclesiastical trammels. The 14th and 15th centuries were the great age of German mysticism, and it was not only in Germany that the tide set this way. Scholasticism had been the expression of a universal church and a common learned language. The university of Paris, with its scholars of all nations numbered by thousands, was a symbol of the intellectual unity of Christendom; and in the university of Paris, it may almost be said, Scholasticism was reared and flourished and died. But the different nations and tongues of modern Europe were now beginning to assert their individuality, and men's interests ceased to be predominatingly ecclesiastical. Scholasticism, therefore, which was in its essence ecclesiastical, had no longer a proper field for its activity. It was in a manner deprived of its accustomed subject-matter and died of inanition. Philosophy, as Hauréau finely says, was the passion of the 13th century; but in the 15th humanism, art, and the beginnings of science and of practical discovery were busy creating a new world, which was destined in due time to give birth to a new philosophy.

The "last of the Scholastics."

*Authorities.*—Besides the numerous works dealing with individual philosophers, the chief histories of Scholasticism are those of Hauréau (*De la Philosophie Scolastique*, 2 vols., 1850; revised and expanded in 1870 as *Histoire de la Phil. Scol.*), Kaulich (*Geschichte d. schol. Philosophie*) and Stöckl (*Gesch. der Phil. des Mittelalters*). Supplementary details are given in Hauréau's *Singularités Historiques et Littéraires*, 1861, and in R. L. Poole's *Illustrations of the History of Mediæval Thought* (1884). The accounts of mediæval thought given by Ritter, Erdmann, and Ueberweg in their general histories of philosophy are exceedingly good. There are also notices of the leading systems in Milman's *History of Latin Christianity*; and the same writers are considered from the theological side in many works devoted to theology and the history of dogma. Jourdain's *Recherches Critiques sur l'Âge et l'Origine des Traductions Latines d'Aristote* (Paris, 1819; 2d edition, 1843), Rousselot's *Études sur la Philosophie dans le Moyen-Âge* (1840–42), Cousin's Introduction to his *Ouvrages inédits d'Abélard* (1836), and Prantl's *Geschichte der Logik im Abendlande* (4 vols., 1855–70) are invaluable aids in studying the history of mediæval thought. (A. SE.)

SCHOMBERG, Frederick Armand, Duke of (*c.* 1619–1690), marshal of France and English general, was descended from an old family of the Palatinate, and was born about 1619. He began his military career under Frederick Henry, prince of Orange, and after his death in 1659 entered the service of France, acquiring ultimately a reputation as a general second only to that of Turenne and the prince of Condé. In Paris he made the acquaintance of Charles II., who according to his own account "admitted him to great familiarities with him." In 1660 he was sent to Portugal, and on his way thither passed through England to concert with Charles measures for supporting that country in the contest with Spain. For his services to Portugal he was in 1668 made a grandee, and received a pension of £5000 a year. In 1673 he was invited by Charles to England, with the view of taking command of the army, but so strong was the general sentiment against the appointment as savouring of French influence that it was not carried into effect. He therefore again entered the service of France, and after his capture of Bellegarde, 29th July 1675, received the rank of marshal. In subsequent campaigns he continued to add to his reputation until the revocation of the edict of Nantes (22d October 1685) compelled him as a Protestant to quit his adopted country. Ultimately he was chosen commander-in-chief of the forces of the elector of Brandenburg, and with the elector's consent he joined the prince of Orange on his expedition to England in 1688, as second in command to the prince. The following year he was made a knight of the Garter, created successively baron, marquis, and duke, and received from the House of Commons a vote of £100,000. In August he was appointed commander-in-chief of the expedition to Ireland against James II. After capturing Carrickfergus he marched unopposed through a country desolated before him to Dundalk, but, as the bulk of his forces were raw and undisciplined as well as inferior in numbers to the enemy, he deemed it imprudent to risk a battle, and entrenching himself at Dundalk declined to be drawn beyond the circle of his defences. Shortly afterwards pestilence broke out, and when he retired to winter quarters in Ulster his forces were in a more shattered condition than if they had sustained a severe defeat. At the same time competent authorities were agreed that the policy of masterly inactivity which he pursued was the only one open to him. In the spring he began the campaign with the capture of Charlemont, but no advance southward was made until the arrival of William. At the Boyne (July 1, 1690) Schomberg gave his opinion against the determination of William to cross the river in face of the opposing army. In the battle he held command of the centre, and, while riding through the river without his cuirass to rally his men, was surrounded by a band of Irish horsemen and met instantaneous death. He was buried in St Patrick's cathedral, Dublin, where there is a monument to him, with a Latin inscription by Dean Swift. Schomberg was generally regarded in Eng-

land with great respect, and his manners and bearing rendered him universally popular.

SCHÖNBEIN, Christian Friedrich (1799–1868), from 1828 professor of chemistry at Basel, is known as the discoverer of Ozone (*q.v.*).

SCHÖNEBECK, a town of Prussian Saxony, on the left bank of the Elbe, 9 miles above Magdeburg. It contains manufactories of chemicals, machinery, percussion caps, starch, white lead, and various other articles, but is chiefly noted for its extensive salt springs and works, which produce about 70,000 tons of salt per annum. Large beds of rock-salt also occur in the neighbourhood, in which shafts have been sunk to a depth of more than 1200 feet. There is a harbour on the Elbe here, and a brisk trade is carried on in grain and timber. In 1885 Schönebeck contained 13,316 inhabitants (including the adjoining communities of Salze, Elmen, and Frohse, about 20,000).

SCHÖNEBERG, a so-called Prussian "village," in the province of Brandenburg, is now really a suburb of Berlin, which it adjoins on the south-west. It contains the royal botanic garden, a large maison de santé, and manufactories of paper collars, enamels, railway rolling-stock, and chemicals. The population in 1880 was 11,180. The foundation of Alt-Schöneberg is ascribed to Albert the Bear (12th century), while Neu-Schöneberg was founded by Frederick the Great in 1750 to accommodate some Bohemian weavers, exiled for their religion (*cf.* Rixdorf).

SCHONGAUER, or Shoen, Martin (1450–*c.* 1488), the most able engraver and painter of the early German school. His father was a goldsmith named Casper, a native of Augsburg, who had settled at Colmar, where the chief part of Martin's life was spent.[1] Schongauer established at Colmar a very important school of engraving, out of which grew the "little masters" of the succeeding generation, and a large group of Nuremberg artists. As a painter, Schongauer was a pupil of the Flemish Roger Van der Weyden the Elder, and his rare existing pictures closely resemble, both in splendour of colour and exquisite minuteness of execution, the best works of contemporary art in Flanders. Among the very few paintings which can with certainty be attributed to him, the chief is a magnificent altarpiece in the church of St Martin, at Colmar, representing the Virgin and Child, crowned by Angels, with a background of roses—a work of the highest beauty, and large in scale, the figures being nearly life size. The Colmar Museum possesses eleven panels by his hand, and a small panel of David with Goliath's Head in the Munich Gallery is attributed to him. The miniature painting of the Death of the Virgin in the English National Gallery is probably the work of some pupil.[2] In 1488 Schongauer died at Colmar, according to the register of St Martin's church.

The main work of Schongauer's life was the production of a large number of most highly finished and beautiful engravings, which were largely sold, not only in Germany, but also in Italy and even in England. In this way his influence was very widely extended. Vasari speaks of him with much enthusiasm, and says that Michelangelo copied one of his engravings—the Trial of St Anthony.[3] Schongauer was known in Italy by the names "Bel Martino" and "Martino d'Anversa." His subjects are always religious; more than 130 prints from copper by his hand are still known, and about 100 more are the production of his *bottega*.[4] Most of his pupils' plates as well as his own are signed M+S. Among the most beautiful of Schongauer's engravings are the series of the Passion and the Death and Coronation of the Virgin, and the series of the Wise and Foolish Virgins; as much as £420 has been given for a fine state of the Coronation plate. All are remarkable for their miniature-like treatment, their brilliant touch, and their chromatic force. Some, such as the Death of the Virgin and the Adoration of the Magi, are richly-filled compositions of many figures, treated with much largeness of style in spite of their minute scale. Though not free from the mannerism of his age and country, Schongauer possessed a rare feeling for beauty and for dignity of pose; and in technical power over his graver and copper plate he has never been surpassed.

The British Museum possesses a fine collection of Schongauer's prints. Fine facsimiles of his engravings have been produced by Amand-Durand with text by Duplessis, Paris, 1881.

[1] The date of Schongauer's birth is usually given wrongly as *c.* 1420; he was really born about thirty years later, and is mentioned by A. Dürer as being a young apprentice in 1470. His portrait in the Munich Pinakothek is now known to be a copy by Burgkmair, painted after 1510, from an original of 1483,—not 1453 as has been supposed. The date of Schongauer's death, 1499, written on the back of the panel by Burgkmair is obviously a blunder; see Hensler in *Naumann's Archiv*, 1867, p. 129, and Wurzbach, *M. Schongauer*, Vienna, 1880. These contradict the view of Goutzwiller, in his *Martin Schongauer et son École*, Paris, 1875. *Cf.* Schnaase, "Gesch. M. Schongauers," in the *Mittheil. der K. K. Commission*, 1863, No. 7.

[2] Another painting of the same subject in the Doria Palace in Rome (usually attributed to Dürer) is given to Schongauer by Crowe and Cavalcaselle, *Flemish Painters*, London, 1872, p. 359; but the execution is not equal to Schongauer's wonderful touch.

[3] An interesting example of Schongauer's popularity in Italy is given by the lovely Faenza plate in the British Museum, on which is painted a copy of Martin's beautiful engraving of the Death of the Virgin; see Pottery, vol. xix. p. 627.

[4] See Bartsch, *Peintre Graveur*, and Willshire, *Ancient Prints*, best edition of 1877. According to a German tradition Schongauer was the inventor of printing from metal plates; he certainly was one of the first who brought the art to perfection. See an interesting article by Sidney Colvin in the *Jahrbuch der k. preussischen Kunstsammlung*, vi. p. 69 Berlin, 1885.

SCHOOLCRAFT, Henry Rowe (1793–1864), a North-American traveller, ethnologist, and author, was born 28th March 1793 at Watervliet (now called Guilderland), Albany county, New York, and died at Washington 10th December 1864. After studying chemistry and mineralogy at college he had several years' experience of their practical application, especially at a glass-factory of which his father was manager, and in 1817 published his *Vitreology*. In the following year he was appointed to the Geological Survey of Missouri and Arkansas, and in 1819 he published his *View of the Lead Mines of Missouri*. Soon after he accompanied General Cass as geologist in his expedition to the Lake Superior copper region, and evinced such capacity for good exploring work on the frontier that in 1823 he was appointed "agent for Indian affairs." He then married the granddaughter of an Indian chief; and during several years' official work near Lake Superior he acquired a vast fund of accurate information as to the physique, language, social habits, and tribal institutions of the American natives. From 1828 to 1832 Schoolcraft was an active member of the Michigan legislature, during the same period delivering lectures on the grammatical structure of the Indian language, which procured him the gold medal of the French Institute. In 1832 also, when on an embassy to some Indians, he ascertained the real source of the Mississippi to be Lake Itasca.

Previous to 1832 he had published *Travels in the Central Portions of the Mississippi Valley*, and in 1839 appeared his *Algic Researches*, containing "Memoirs of a Residence of Thirty Years with the Indian Tribes," and also, notably, "The Myth of Hiawatha and other Oral Legends,"—probably the first occurrence of the name immortalized (in 1855) in Longfellow's poem. Schoolcraft's literary activity was indeed remarkable, since, besides his ethnological writings, he composed a considerable quantity of poetry and several minor prose works, especially *Notes on the Iroquois* (1848), *Statistics of the Six Nations* (1845), *Scenes and Adventures in the Ozark Mountains* (1853). His principal book, *Historical and Statistical Information respecting the Indian Tribes of the United States*, illustrated with 336 well-executed plates from original drawings, was issued under the patronage of Congress in six quarto volumes, from 1851 to 1857. It is a vast mine of ethnological researches as to the Red Men of America, systematically arranged and fully, if not exhaustively, detailed,—describing not only their origin, history, and antiquities, but the physical and mental "type," the tribal characteristics, the vocabulary and grammar, the religion and mythology. Schoolcraft's diplomatic work on the Indian frontier was important,—more than sixteen millions of acres being added to the States' territory by means of treaties which he negotiated.

SCHOOLS. See Education, Blind, Deaf and Dumb, Conservatory, &c., and the relative sections of the articles on individual countries and states.



# SCHOOLS OF PAINTING

Meaning of "school."

THE word "school" as applied to painting[1] is used with various more or less comprehensive meanings. In its widest sense it includes all the painters of one country, of every date,—as, for example, "the Italian school." In its narrowest sense it denotes a group of painters who all worked under the influence of one man,—as, for example, "the school of Raphael." In a third sense it is applied to the painters of one city or province who for successive generations worked under some common local influence, and with some general similarity in design, colour, or technique,—as, for example, "the Florentine school," "the Umbrian school." For many reasons the existence of well-defined schools of painting is now almost wholly a thing of the past, and the conditions under which the modern artist gains his education, finds his patrons, and carries out his work have little in common with those which were prevalent throughout the Middle Ages. Painters in the old times were closely bound together as fellow-members of a painters' guild, with its clearly defined set of rules and traditions; moreover, the universal system of apprenticeship, which compelled the young painter to work for a term of years in the *bottega* or studio of some established freedman of the guild, frequently caused the impress of the genius of one man to be very clearly stamped on a large number of pupils, who thus all picked up and frequently retained for life certain tricks of manner or peculiarities of method which often make it difficult to distinguish the authorship of a special painting.[2] The strong similarity which often runs through the productions of several artists who had been fellow-pupils under the same master was largely increased by the fact that most popular painters, such as Botticelli or Perugino, turned out from their *botteghe* many pictures to which the master himself contributed little beyond the general design,—the actual execution being in part or even wholly the work of pupils or paid assistants. It was not beneath the dignity of a great painter to turn out works at different scales of prices to suit rich or poor, varying from the well-paid-for altarpiece given by some wealthy donor, which the master would paint wholly with his own hand, down to the humble bit of decorative work for the sides of a wedding *cassone*, which would be left entirely to the 'prentice hand of a pupil. In other cases the heads only in a picture would be by the master himself or possibly the whole of the principal figures, the background and accessories being left to assistants. The buyer sometimes stipulated in a carefully drawn up contract that the cartoon or design should be wholly the work of the master, and that he should himself transfer it on to the wall or panel. It will thus be seen how impossible it is always to decide whether a picture should be classed as a piece of *bottega* work or as a genuine production of a noted master; and this will explain the strange inequality of execution which is so striking in many of the works of the old masters, especially the Italians. Among the early Flemish and Dutch painters this method of painting does not appear to have been so largely practised, probably because they considered minute perfection of workmanship to be of paramount importance.

## 1. *Italian.*

In Italy, as in other parts of Europe, the Byzantine school of painting was for many centuries universally prevalent,[3] and it was not till quite the end of the 13th century that one man of extraordinary talent—Giotto—broke through the long-established traditions and inaugurated the true Renaissance of this art. According to Vasari, it was Cimabue who first ceased to work in the Byzantine manner; but the truth is that his pictures, though certainly superior to those of his predecessors, are thoroughly characteristic specimens of the Byzantine style. Ghiberti, in his *Commentary* (a century earlier than Vasari's work), with greater accuracy remarks that both Duccio of Siena and Cimabue worked in the Byzantine manner, and that Giotto was the first who learnt to paint with naturalistic truth.

In the 12th and the early part of the 13th century Pisa and Lucca were the chief seats of what rude painting then existed in Italy. A number of works of this date still exist, chiefly painted Crucifixions treated in the most conventional Byzantine manner. Giunta Pisano, who was painting in the first half of the 13th century, was a little superior to the otherwise dead level of hieratic conventionalism. He is said to have been Cimabue's master. In the 14th century painting in Pisa was either Florentine or Sienese in style.

Fig. 1.—Centre of a triptych, by Duccio di Buoninsegna,—the Madonna with Angels, and, above, David and six Prophets. (National Gallery, London.)

Siena.

No city, not even Florence, was so fertile as Siena in native painters during the 13th and 14th centuries. The earliest, working before 1300, did not emancipate themselves from the old Byzantine mannerism; Guido da Siena, Duccio (see fig. 1) and Segna di Buoninsegna possessed many of the peculiarities of the old school,—its rigid attitudes, its thin stiff folds, and its greenish shadows in the flesh tints. In the first half of the 14th century a number of very able painters were carrying on at Siena a parallel development to that which Giotto had inaugurated

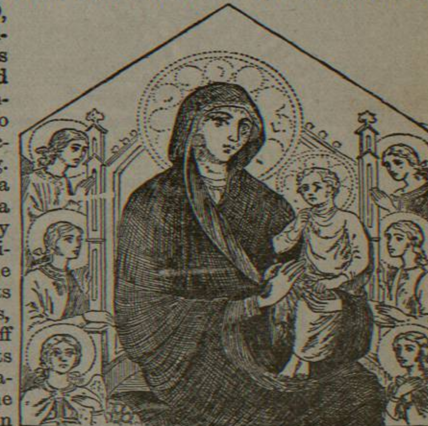

Fig. 2.—Madonna, by Cimabue. (National Gallery.)

[1] For classical painting, see Archæology, vol. ii. p. 343 *sq.*; see also Fresco, Mural Decoration, Tempera, and the articles on separate painters.

[2] This is especially the case with the numerous pupils of Perugino.

[3] See Mural Decoration, vol. xvii. p. 43 *sq.*

at Florence; chief among them were Simone di Martino, Lippo Memmi, and especially Ambrogio Lorenzetti, a

Fig. 3.—Fresco in the church of Santa Croce, Florence, by Giotto—the Disciples of St Francis discovering the Stigmata on his Body.

painter of both panels and large frescos, which show rich and noble imaginative power and much technical skill. It is important to note that Ambrogio and probably other painters of his time were, like the earlier Pisan Niccola, beginning to study the then rare examples of classical sculpture. Ghiberti, in his *Commentary*, speaks with enthusiasm of the beauty of an antique statue which he knew only from a drawing by Ambrogio Lorenzetti. In the second half of the 14th century Siena produced a large

Fig. 4.—Fresco over a door in the cloister of the convent of S. Marco at Florence, by Fra Angelico—Christ meeting St Domenic and St Francis.

Fig. 5.—Picture on canvas in the Uffizi, Florence, by Botticelli—the Birth of Venus.

number of more mediocre painters; but these were succeeded by an abler generation, among whom the chief were

Fig. 6.—The Annunciation, by Lippo Lippi. (National Gallery.)

perhaps Sano di Pietro and Matteo di Giovanni, whose grand altarpiece (No. 1155), recently acquired, is one of the glories of the English National Gallery. Many excellent masters were working at Siena throughout the 15th century and even later; the last names of any real note are those of Peruzzi and Beccafumi. Sodoma, though he settled in Siena in 1501, does not belong to the school of Siena; his early life was passed at Milan, chiefly under the influence of Da Vinci. His talent was developed at Rome among the followers of Raphael.

Fig. 7.—Portrait head, by Ghirlandaio, from Florence one of his frescos in the retro-choir of S. Maria Novella, at Florence.

On the whole the Florentine school surpasses in importance all others throughout Italy. Cimabue, though he

Fig. 8.—The so-called School of Pan, by Signorelli, the most beautiful of his easel pictures. (Berlin Gallery.)

did not emancipate himself from the Byzantine manner, was a painter of real genius (see fig. 2). Giotto is perhaps the most important painter in the history of the development of art, for during the whole of the 14th century the painters of Florence may be said to have been his pupils and imitators (see fig. 3). Orcagna alone developed rather a different line, more richly decorative in style and brighter in colour,—a link between the art of Giotto and that of Siena. In the 15th century Florence reached its period of highest artistic splendour and developed an almost

Fig. 9.—Fresco of Isaiah, by Michelangelo, from the vault of the Sistine Chapel.



naturalistic school, which appears to have been inaugurated by Masolino and Masaccio. Some few painters, such as Fra Angelico (see fig. 4) and his pupil Benozzo Gozzoli, produced more purely sacred and decorative work, following the lead of Orcagna. As Baron Rumohr has pointed out, the main bulk of the Florentine 15th-century painters may be divided into three groups with different characteristics. The first, including Masolino, Masaccio, Lippo Lippi, Botticelli, Filippino Lippi, and their pupils, aimed especially at strong action, dramatic force, and passionate expression (see figs. 5 and 6). The second, including Baldovinetti, Rosselli, Ghirlandaio, and his pupils, are remarkable for realistic truth and vigorous individuality (see fig. 7). To the third belong Ghiberti, who began life as a painter, Pollaiuolo,[1] Verrocchio, and his pupils Leonardo da Vinci and Lorenzo di Credi,—a group largely influenced by the practice of the arts of the goldsmith and the sculptor. Signorelli, whose chief works are at Orvieto and Monte Oliveto near Siena, was remarkable for his knowledge and masterly treatment of the nude (see fig. 8), and had much influence on the early development of Michelangelo, whose gigantic genius in later life produced the most original and powerful works that the modern world has seen (see fig. 9). Andrea del Sarto was one of the last artists of the golden age of painting in Florence; the soft beauty of his works is, however, often marred by a monotonous mannerism. To him are wrongly attributed many paintings by Puligo and other scholars,

Fig. 10.—Baptism of Christ, by Piero della Francesca. (National Gallery.)

Fig. 11.—The Adoration of the Shepherds, by Fiorenzo di Lorenzo. (Gallery at Perugia.)

who imitated his style with various degrees of closeness. The 16th century in Florence was a period of the most rapid decline and was for long chiefly remarkable for its feeble caricatures of Michelangelo's inimitable style.

Between the end of the 14th and the beginning of the 16th century the Umbrian school produced many painters of great importance grouped around a number of different centres, such as Gubbio, where Ottaviano Nelli lived; San Severino, with its two Lorenzos; Fabriano, famed for its able masters Allegretto Nuzi and Gentile da Fabriano; Foligno, whence Niccolo took his name; and above all Borgo San Sepolcro, where Piero della Francesca was born. Piero was one of the most charming of all painters for his delicate modelling, tender colour, and beauty of expression (see fig. 10). His masterpiece, a large altar-painting of the Madonna enthroned, with standing saints at the side and in front a kneeling portrait of Duke Federigo da Montefeltro, in the Brera gallery,

Fig. 12.—Centre of triptych, by Perugino, painted for the Certosa near Pavia. (National Gallery.)

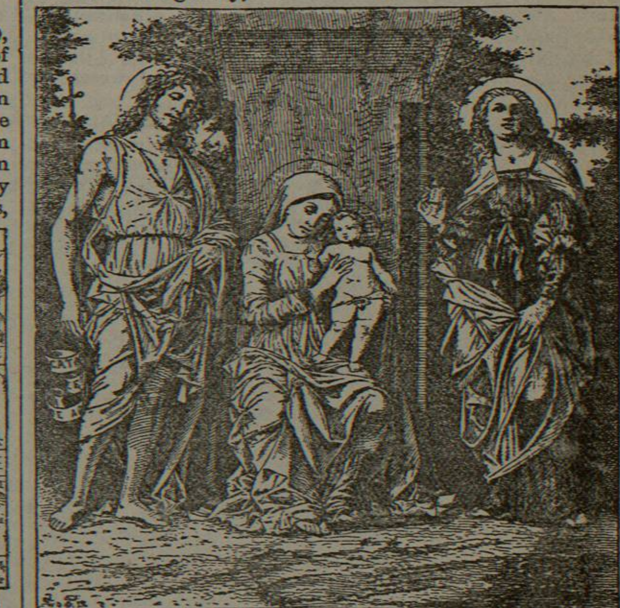

Fig. 13.—The Madonna between St John Baptist and St Mary Magdalene, by Andrea Mantegna, on canvas. (National Gallery.)

is, strange to say, attributed to his pupil Fra Carnovale.

[1] It is interesting to note how Ant. Pollaiuolo's fine figure of St Sebastian in the National Gallery (London) resembles the statue of the same saint in Lucca cathedral by Matteo Civitale.

[2] The attribution of this magnificent picture to Fra Carnovale rests wholly on a statement, evidently erroneous, of Pungileoni; and hence many other works by Piero, such as the St Michael in the National Gallery, are wrongly given to Carnovale. It is doubtful whether any genuine picture by the latter is now known; if the Brera picture were really by him he would not only be greater than his master Piero, but would be one of the chief painters of the 15th century.