

Crafts and the Zodiac

Picture for July in a devotional manual of the Duke of Berry. In a landscape dominated by a castle, sheep are being shorn in the foreground. The picture is vaulted by a semi-circle, reminiscent of the astronomical clock described by Al Gazari (ab. 1200), in which only half of the revolving circle was visible, showing the signs of the Zodiac. Early 15th century.



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*takes the place of soap
in the development of vat and azoic colors,
in hard water*

*for the development of vat colors
on loose material*

improves the spinning properties

Basle . June 1939

Crafts and the Zodiac

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The World of Astrology

By W. Born

Modern industries, the textile industry among them, are based on the crafts of the Middle Ages. The technical development of the crafts is only one side of their varied history. This number of the *Ciba Review* is designed to show, chiefly from the point of view of the historian of the fine arts, the influence of astrology on medieval life and crafts.

The Editor.

Origins

The belief in the power of the stars—now degenerated to a superstition of the ignorant—was once common to all mankind. It finds expression in the primitive cult of sun and moon, and thus goes back to prehistoric times. With the discovery of laws governing the movements of the stars, the magic system of astrology was born. That was in the ancient civilization of Babylon. The Sumerians already, the first civilized people, according to our knowledge, to be masters of Mesopotamia four thousand years before Christ, had astrological beliefs which they derived from their observations of the stars. When, about 2750 B. C., the first Semitic dynasty came to the throne, there began the rise to a great power of the real Babylon, to be followed by the kindred empire of the Assyrians. This period lasted about 2,000 years in all, during which many of the foundations on which modern civilization rests were built. The Babylonians or the Chaldaeans, as they are called in the Bible, have in the popular imagination always been associated with astrology, and that justly, for they devised a system of star-lore. Our knowledge of Babylonian astrology is largely due to the library of the Assyrian King Assurbanipal (668–626 B. C.), a collection of tablets inscribed with cuneiform characters. The astrological works among this collection were proved to be revisions of very ancient writings. Man's perpetual desire to know the future seemed near fulfilment, when he thought to have deciphered the language of the stars. There were indisputable daily proofs of the influence of the sun on vegetation and of the moon on tides. There being no scientifically critical method of reasoning to act as a check, such observations were generalized; even where there was no tangible proof, stel-



The astrologer. Engraving by J. Collart after Jan van der Straet, known as Stradanus (1523–1605). From "Nova Reperta", a series of the pharmaceutical calendar published by Joannes Galle (1600–1667) at Antwerp.

lar influences were assumed, not only of sun and moon, but of other celestial bodies as well. As the movements of the stars were governed by laws, it was assumed that the events on earth must also move according to laws. At that time no difference was made between atmospheric and astronomical phenomena, both were taken as portents. For instance, if on the eve of a victorious battle the crescent moon had risen from a bank of clouds, shining brilliantly down upon the earth, the repetition of such a sight was taken as a sure indication of a second victory.

The influence of the stars on human destiny was explained by the traditional belief that they were in reality gods and demons. First the planets were personified; this was probably because of their movements, which were taken as a sign of life. There were seven: Moon and Sun (both regarded as planets), Jupiter, Venus, Saturnus, Mercury, and Mars; that was the Babylonian order, and seven as the number of planets retained its significance until Copernicus' discoveries made an end of the geo-centric system. In the course of time the seven planets were identified with the seven principal gods of the Babylonian pantheon. The moon had always been known as Sin, the wise old father of the gods, Shamash, the sun, was his child, the

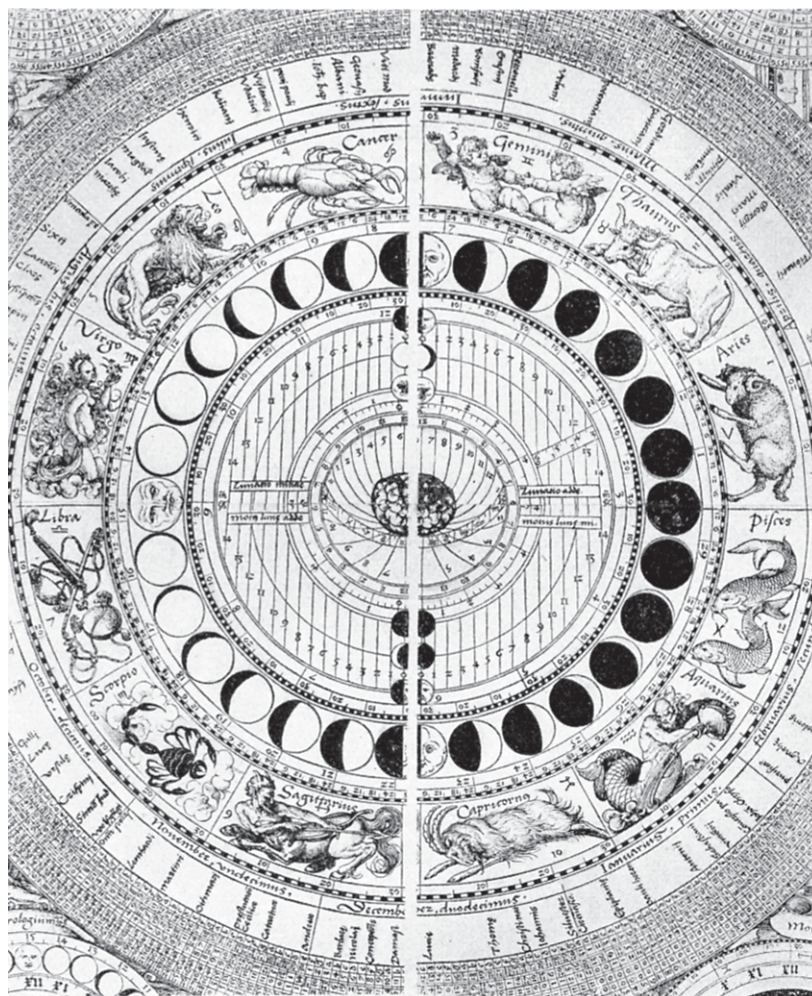
bringer of light and the genius of right; Jupiter became the god Marduk, Venus the goddess of love and maternity, Ishtar; Saturnus was identified with Ninib, the god of war, Mercury with Nabu, the god of scribes, and Mars with Nergal, god of the Underworld.

Whatever the precise reason for this identification of deities and planets may have been, it is safe to assume that some peculiarity of the star in question influenced the choice—either size, colour, or rapidity of movement, etc. The personification of the planets gave rise to elaborate speculation. The mythological characters of the gods were ascribed to their respective planets. This idea persisted with some modifications when the Babylonian gods were replaced by those of Greece, and even remained alive at a time when they too had long become merely historical reminiscences.

The influence of mythology on the thought of the Ancient World finally led to the entire firmament being peopled with supernatural figures. The most various shapes were woven into the mysterious points of light in the night sky. In this manner the familiar constellations, such as Orion, Plough, etc., originated, and though their names have no relation to astronomical facts, they have persisted to this day.

Among these constellations, the ones traversed by the stars in their courses excited the greatest interest. The ring formed by courses of the planets was named after the most striking cosmic event observed on it, the eclipses of sun or moon, and was called the ecliptic. The constellations situated on the ecliptic form the signs of the Zodiac.

The Zodiac owes its division into 12 parts to the application of the lunar month to the



*The Zodiac.
Woodcut by
H. Holbein the
Younger (1497/98
to 1543) for
Sebastian
Münster's
"Instrument
beider Lichter",
Basle 1534.
Drawn about
1532.*



Medieval conception of the Universe. Woodcut from Hartmann Schedel's "Chronicle of the World". Nuremberg 1493, showing the spheres revolving as rings round the earth.

course of the sun. The Assyrians already used the names of the Zodiac to distinguish the months. There is, indeed, little doubt that in some cases patron deities of months were the origin of Zodiac symbols, Ishtar, for instance, to whom the sixth month was sacred, and who became the Virgin in the system of the Zodiac, or Nergal, the archer, the Sagittarius of the Zodiac. Furthermore, various systems of nomenclature evidently overlapped, as most of the names of the Zodiac are derived from animals, being simply projections of animal symbols and animal myths on to the stellar system. The Libra (scales), a late addition, is a symbol of the autumnal equinox, which occurs in September. Already in the Ancient World symbols were in use for the different signs of the Zodiac, which are given here in addition to the Latin names in the order of months, beginning with March: Aries ♈, Taurus ♉, Gemini ♊, Cancer ♋, Leo ♌, Virgo ♍, Libra ♎, Scorpion ♏, Sagittarius ♐, Capricorn ♑, Aquarius ♒, Pisces ♓.

In the earliest records already Aries marks

the beginning of the Zodiac. It forms the junction of ecliptic and celestial equator, i.e., the point at which, during the spring equinox, the sun would rise if the earth's axis were still where it was in 1800 B.C., the time at which the idea of the Zodiac assumed definite shape in Babylon. In reality, however, the North Pole of the earth describes a circular movement, returning to its starting-point only after 26,000 years. This explains the variation of the point of sunrise at the spring equinox. All later combinations based on the position of the Zodiac observed in ancient Babylon are therefore wrong, even if we were to suppose that they might have any bearing on the life of man. At the present day, for instance, the spring equinox is no longer in Aries, but in Pisces.

The Egyptian astrologers divided each twelfth of the Zodiac, that is every space of 30° in the ecliptic into three sub-divisions, which they allotted to separate deities, the decani. This system was gradually adopted by astrologers everywhere.

The Growth of Astrology

When in 539 B.C. Assyria was conquered by the Persians, astrology not only continued to flourish in Mesopotamia, but also penetrated Iranian civilization. But not until the age of Alexander the Great, who in 330 B.C. conquered Persia and Babylon, did it find its way to Europe. The Greek spirit imbued the magic system of astrology with rational elements, and the result was that brilliant pseudo-scientific edifice which found its culmination for all time in the figure of Claudius Ptolemaeus (ca. 150 A.D.). Ptolemy was a Greek living at Alexandria, the city founded by Alexander the Great on the coast of Egypt, where the ancient civilizations of Asia were blended with the young spirit of Hellenism. Ptolemy's teachings were taken up by the Arabs, who during the time of the migration of nations preserved, together with many another heritage of the Ancients, the teachings of astrology, which they handed on to Europe in a more developed form during the 13th century. Towards the end of the Middle Ages there was a great revival of astrology in Europe, after it had somewhat perfunctorily been brought into line with Christian teaching. Strangely enough, this continued during the Renaissance, the period which saw the birth of exact science and detached research.

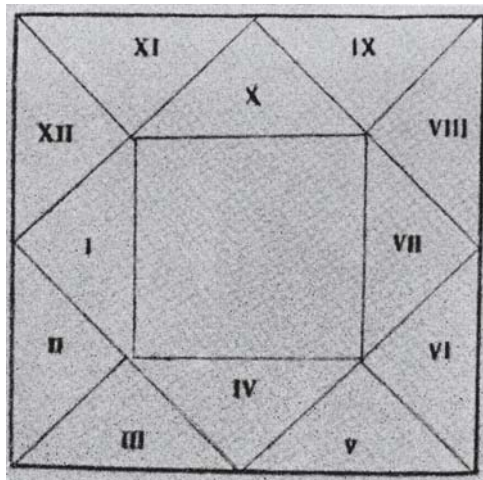
The medieval system of astrology, which underlies the conception of the universe in Dante's *Divine Comedy*, assumes, in accordance with ancient tradition, the terrestrial globe as the centre of the universe. It is surrounded by concentric "spheres", like a series of shells. First come the three spheres of water, air, and fire, which together with earth correspond to the four elements. Then follow the seven planetary spheres, the lowest of which bears the moon, the topmost Saturnus. These spheres revolve at different speeds from East to West. The planetary spheres are surrounded by the sphere of the fixed stars, which is the eighth, and revolves in the counter-direction. The ninth is the starless crystal sphere, which is impelled to motion by the "Primum mobile", God himself. At a later date the Empyreum was added, the throne of the Trinity and the home of the blessed. Nine hosts of angels guard the nine spheres.

Though astrology was, in a measure, made to conform to Christian thought, the movements of the planets continued to be explained as manifestations of the will of planetary gods.

The Methods of Astrology

In order to determine the influence of the stars on the fate of man, a theory was evolved in Babylon which in its essentials remained unchanged until the Renaissance, though various minor points were added to it in the

Diagram of the twelve "loci" of the sky: I. Life. II. Business. III. Brothers. IV. Parents. V. Children. VI. Health. VII. Marriage. VIII. Death. IX. Religion. X. Government. XI. Charity. XII. Prison.



course of the centuries. The most important elements were the relations between the planets and the constellations of the Zodiac, both being regarded as individual divinities. To each sign of the Zodiac belonged a "house" which it governed. At the time of the creation of the world, the planets were in the houses of the Zodiac; the reasons for the order of their distribution were less clear than in the case of the sun, which, being symbolized as a lion, was naturally allotted to the sign of the Lion (Leo). The moon was assigned to Cancer. Sun and moon, the rulers of day and night respectively, received one house each, the planets a day and a night-house: Saturnus received Capricorn and Aquarius; Jupiter, Sagittarius and Pisces; Mars, Scorpion and Aries; Mercury, Virgo and Gemini; Venus, Libra and Taurus. Symbols resembling those of the Zodiac were assigned to the planets; to Mercury ☿, to Venus ♀, to Mars ♂, to Jupiter ♃, to Saturnus ♄, to the sun ☉, to the moon ☾. Each planet was at its most powerful when it entered its own house, especially so when in its day-house by day and in its night-house by night. The constellation of the Zodiac rising above the horizon was called the "horoscope", that is "the part of the Zodiac looking at the hour". The term horoscope was later applied to the entire position of the stars at a certain hour, i.e. the hour of birth. The rising point of the ecliptic was called the ascendant. From this point the so-called four centres or "corners" of the heavens were measured. Starting from these four points a geometrical schema of twelve loci (see ill. adjoining) was devised. To these twelve loci the most important questions which were to be answered were assigned. The actual astral processes were observed according to their "aspects". There, too, an abstract schema was essential. The signs of the Zodiac were marked at equal distance from each other on a circle. Those of them in whose houses the planets stood at a given time were connected by lines, so that according to circumstances a system of lines, triangles, quadrangles, and hexagons resulted. These are the so-called oppositions, trines, quartile aspects, etc., some of which were favourable in the eyes of the astrologers, some unfavourable. On this airy foundation an edifice of fantastic deductions embracing every phase of life was based; geography, ethnology, medicine, characterology, botany,

and mineralogy, all found a place in the magic system. Countries and peoples, metals, flowers, and ages were placed in relation to certain planets, while different parts of the body were subjected to the signs of the Zodiac.

In time the system became so complicated that it was impossible to keep track of details. The Graeco-Oriental period which followed Alexander the Great and the Graeco-Roman

age added the constellations adjacent to those of the Zodiac, the so-called Paranatellonta, to the powers of destiny. The last great age of astrology, the 15th and 16th centuries, not only brought a flood of prophecy, which made a profound impression on the people of that time, but also introduced into everyday life astrological ideas which had considerable influence on trades and crafts of the period.

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Man's Labour through the Year

By W. Born

The Calendar of the Ancients

At the beginning of all higher civilization stands the calendar. As soon as man began to regulate his activities, he of necessity became conscious of the passing of the seasons and of their annual recurrence. No doubt it was peasants who, as a result of observing cosmic phenomena, introduced the calendar. The connection between such phenomena and agricultural labour has since then always been maintained in the mind of man.

In art the Greeks were the first to link the idea of the Zodiac, which they had adopted from Babylonia, with the cycle of the year. They evolved, probably in the 3rd century B.C., the calendar of feasts by linking the allegories of the monthly feasts with the corresponding signs of the Zodiac. Religious conception in Greece being so closely linked with daily life, it is natural that in the Greek calendar the religious element should predominate. On the other hand, Greek economy—like that of the Middle Ages—was based largely on agriculture. For that reason the allegorical repre-

sentations of the months could scarcely be anything but the illustration of the rustic labours performed throughout the year in accordance with the position of the sun. Greek art, however, avoided as far as possible scenes showing labour. For that reason it would be in vain to look for realistic scenes of work on calendars of ancient Greece. Instead of that the occupation peculiar to each season was symbolized by a feast which, like the harvest festival today, was in some way connected with the labour, and gave to it a religious significance. In a word, the Greek calendar was mythological.

We are acquainted with the Greek calendar of feasts through a stone relief of the 2nd century B.C., which is let into the wall of the old Metropolitan Church at Athens. Each of the twelve months is represented by its principal feast, beside which the corresponding sign of the Zodiac is placed. The autumnal wine-feast (October–November) is represented by two men gathering grapes, and working the wine-press, while the feast of agrarian

Pictorial calendar of the "Chronographer" of 354. The figure personifies October, holding a hare in his hand as a symbol of the autumn hunt. Right: Corresponding page showing the sign of the Scorpion. After Strygowski.



Zeus Georgos (November–December) is symbolized in the figures of Buzyges, the mythical inventor of the ox-drawn plough, and of a sower following him.

In accordance with their more sober character, the Romans paid greater attention to the practical than to the artistic side of the calendar. A rural calendar has been preserved at Pompeii; it is hewn into a cubic block of stone, which serves purely and simply as an article of use. Mythology and sculpture play only a very secondary part. At the upper edges of each of the four sides of the block the signs of the Zodiac are engraved. Under these are columns of words without any illustration at all, enumerating the work to be done by the peasants in the various months, giving the names of the gods who are patrons of the months, the dates for sacrifices, the number of days in the month, the length of days and nights, besides information as to the rising and setting of the stars most important for computing the time; this latter information was probably dictated in part by popular astrological interest.

The earliest calendar in book form, which has come down to us in a 9th century copy, is the so-called "Pictorial Calendar of the Chronographer of 354" (see ill. p. 771). A papal calligraphist named Dionisius Filocalus copied it from an original of the early imperial period, making some revisions in the process. Oddly

enough, Filocalus retained the heathen gods, though somewhat obscuring their various religious characters. The Greek scenes of feasts and the Roman tables of information are combined in this calendar, the arrangements being for an illustration and an illuminated page of text to face each other, an arrangement which became of great importance for the further development of the calendar. In accordance with the allegorical character of the illustrations, the labour and produce of the various months are symbolised; a basket of roses represents May, a sickle June, a bunch of grapes September. The respective signs of the Zodiac are on the opposite pages.

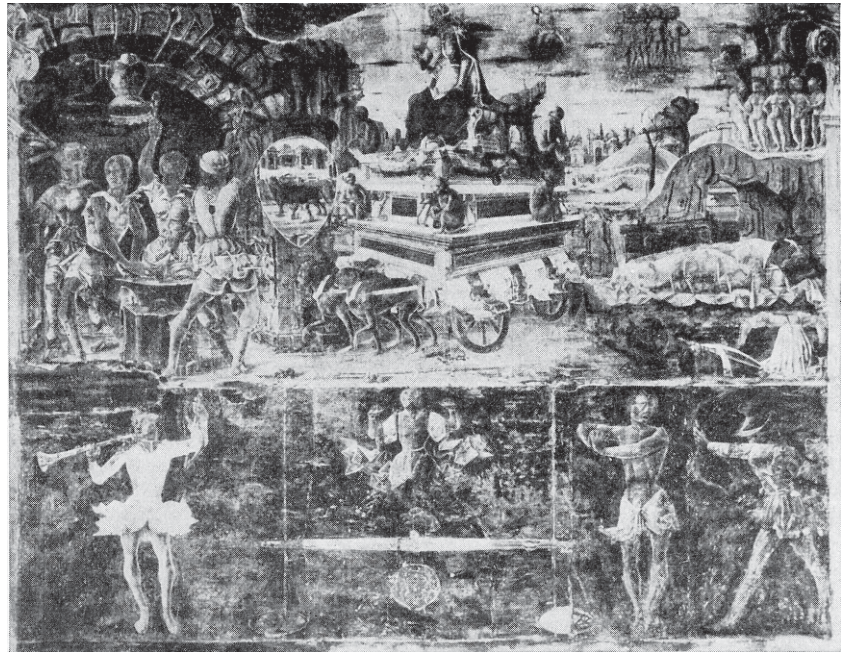
As far as we can judge from coins and copies of astrological charts which have come down to us, the allegorical character of the figures symbolizing the months seems to have undergone a change in Roman Alexandria. It became customary to depict them at certain occupations, just as had already been done on the calendar of the Metropolitan Church in Athens. After the fall of the Roman Empire this trend was discontinued. As far as calendars were concerned, Byzantine art remained at this stage, and did not develop any further until towards the end of the first millennium A.D., when it followed the trend developing in Western Europe.

The astrological, as well as the astronomical significance of the signs of the Zodiac became



Coopers at work. Allegory for October. Relief by Niccolo and Giovanni Pisano and Arnolfo di Cambio on the great fountain at Perugia (1290).

Fresco in the Palazzo Schifanoja at Ferrara, representing the month of September. By Francesco del Cossa and his pupils (ab. 1470). Top: Triumph of Vulcan. On the left smiths are seen at work. Below: Libra and the corresponding decani.



prominent during the latter ages of the Ancient World, and this was a factor which was to be of great importance for the development of astrological calendars at a much later date. In the first two decades of the first century A. D., Marcus Manilius, a Roman astrologer and poet, wrote an elaborate didactic poem in hexameters, entitled "Astronomica", which, as far as it was written or has been preserved, treats only of the Zodiac and its houses. The poem, which is of great literary interest, assigns various important trades or professions to the different signs of the Zodiac. Spinning is assigned to Aries (the Ram) because of its wool; the rhythmical occupations, music and astronomy, are subjected to the Gemini (or Twins); overseas trade is governed by Cancer, while Virgo rules scholarship and language. The hunter's constellation is Leo, the soldier's the Scorpion, the animal-tamer's is Sagittarius. Capricorn, the brightest star of which is Vesta, the goddess of the hearth, ruled cooking, smelting, and also the crafts which made clothing to guard against the cold of winter, i. e., the textile crafts. To Aquarius and Pisces, finally, were assigned bridge-building and all crafts connected with the sea. The idea of connecting trades and professions with the signs of the Zodiac was due to the belief in the dependence of man's fate on the stars. Just as the individual is predestined to a course

ordained by the position of the stars, so too, is the form of economic life governed by the forces of astrology.

So far, no direct trace of this belief has been found in Roman art, but it had all the more influence on the imagination of the peoples of the Orient, the declining Middle Ages, and the Renaissance.

The Calendar of the Middle Ages and the Renaissance

The final development of the calendar illustration to a picture of some typical labour suited to the season of the year did not take place until after the migration of nations in Western Europe. Charlemagne was the first to go back deliberately to the traditions of Rome. At that time, i. e., at the beginning of the 9th century, the old Roman calendars were copied. The Christian Church, however, rejected the pictorial representation of the heathen gods, and replaced them by human figures performing the labours dictated by the various seasons of the year. That was a great stride in the development of the calendar. The change did not, of course, come all at once with a sudden creation of new types of illustration. Every artistic achievement is based on what has gone before it. Therefore the Carolingian book illustrators engaged in the adornment of calendars took their cue from

late Roman art, which was regarded as a model in many respects. Little by little the Romans had learnt to reproduce working scenes, though not without some hesitation and always linked with religious belief. As the murals of Pompeii show, work was first treated in a fanciful manner by the Roman artists; they put the tools into the hands of winged cherubs, who handled them playfully rather than as implements of work. Soon, however, wealthy artisans and manufacturers began to have the tools of their trade carved on their tombstones, a practice which possibly goes back to Egyptian influence, it being the custom in Egypt to depict a man in the mural paintings of his tomb as engaged in whatever trade or profession he may have followed while on earth. Comparison between the oldest known Carolingian cycle of pictures representing the various months (a Salzburg manuscript deriving from an earlier French original) and working-scenes painted by late Roman artists shows that the new types followed the lines of older models. The Salzburg manuscript marks the turning-point. We find in it in a primitive form the type of pictures which recur in varying stages of perfection through centuries to come: January depicted as a man warming himself by the fire, the peasant at the plough as June, or mowing the hay as July, the harvester with his reaping-hook as August, the wine-grower filling a barrel of grape-juice as October, and December symbolized by the slaughtering of pigs. In another manuscript, the so-called *Carmina Salisburgensia*, the words to accom-

pany these pictures have been preserved, characteristic descriptions of the months in the form of distichs, which (though themselves derived from older models) may be regarded as the nuclei of the calendar poetry which followed them.

During the subsequent centuries, the scheme was more and more elaborated. The solitary figure of the peasant or craftsman at work was joined by a second; this was the beginning of the genre picture so closely associated with the calendar or almanac.

When finally purged of the remnants of heathen mythology, the calendar was incorporated into the theological system of the Church. Christian calendars of the Romanesque period, e.g. the *Psalter of St. Elizabeth* (13th century), still show the signs of the Zodiac and scenes illustrative of the months (the latter revealing an increasing measure of realism in conception), but they take a more modest place in the general plan, whilst apostles or martyrs figure as patron saints of the months.

The comprehension of the entire range of intellectual life by the Church found its most significant literary expression in the "*Speculum Maius*" (*Mirror of the World*) of the learned Dominican Vincent of Beauvais, which became a kind of iconographic programme for the artists of the age. The Church represented the Christian conception of the world by means of symbols, and it was the function of the arts to illustrate this conception.

With the rise of the great Christian monarchies of Europe the cathedrals had become



Symbols of the months and signs of the Zodiac in the cathedral of Amiens. Left to right: March: Aries, April: Taurus, May: Gemini. First half of 13th century

the centres of creative art, and there the calendar received renewed attention. The church surrounded like a miniature cosmos the faithful united in the same belief. On its walls the paintings of the artists reflected the life of man, which had found its fulfilment and support in the teachings of the Church. The passing of the year with its varying activities and religious feasts, which linked the heavenly with the earthly sphere, offered many opportunities for pious reflection. Calendar-pictures first appeared as mosaics on the floor and walls, but soon received the place of honour above the porch, where they took the form of reliefs; the calendar had assumed monumental form.

The signs of the Zodiac had gradually become so firmly fixed in the minds of the people as symbols of the months that the Church was unable to do without them. They were, however, in the main regarded as astronomical symbols, and their astrological character did not receive much attention, the less so as astrology was almost forgotten in Europe until the 13th century. For that reason an inherent connection between the sign of the Zodiac and the work for the corresponding month as shown in the picture is rarely found.

The architectural form of the reliefs usually consisted in the distribution of the twelve months over the fields of small arcades. Sometimes the form of a continuous frieze was chosen. The signs of the Zodiac were either placed in medallions between the arcades or given a place within the general composition of the scene symbolizing the activities of the corresponding months. An instance of the former solution—to quote first Italian examples, which were naturally closer to the classical tradition than others—is to be seen in the cathedral of Lucca, another in that of Cremona. Here the artist shows an ibex (Capricorn), the December sign, climbing a tree which a man is seen cutting. The second of the two forms of design mentioned found its most perfect expression in the calendar reliefs above the main portal of San Marco in Venice. Among the earliest forerunners of the Renaissance are the reliefs on a piece of secular architecture, the great fountain of Perugia (1290), which were executed by Niccolo and Giovanni Pisano and Arnolfo di Cambio (see ill. p. 772). Two framed reliefs, each consisting of one figure, are united to symbolize every month. The subject chosen to represent



Detail from the miniature representing September in the Breviarium Grimani of the Library of St. Mark, Venice. Leech bleeding a patient. Alexander and Paul Bening. Ab. 1500. After S. de Vries.

February is obviously the result of astrological influence; as is occasionally seen on earlier examples, this month is represented by fishermen, its sign being Pisces, the fish.

In the early Renaissance the decoration of secular buildings with calendar scenes was no longer unusual. In about 1470, Francesco del Cossa and a number of assistants painted a room in the Palazzo Schifanoja in Ferrara with frescoes, which, deriving from the didactic astrological poem by Manilius are nothing more nor less than a huge pictorial calendar. The frescoes depict scenes from life at the court of the then reigning duke, Borso d'Este, arranged according to the various months of the year, thus forming an aristocratic counterpart to the labour-scenes of the old calendars. Above the paintings the signs of the Zodiac are painted against a dark background, each surrounded by the three decani belonging to it. Above the frieze again are triumphal processions of the classical gods sacred to the different months, showing the various activities which correspond to each sign of the Zodiac. Among these activities various crafts are shown; thus a group of women weaving are seen beside the figure of Minerva, whose month is March, under the sign of Aries (cf. *Ciba Review* No. 8, pp. 273 to 275). Vulcan, linked with Libra and the month of September, is seen together with a group of smiths (see ill. p. 773).

In France the development of these calendar pictures was particularly varied. Under the Norman arch of the portal of Vezelay (12th century) the cycle of the year appears in a series of medallions, or arranged one above the other beneath the early Gothic arches of Chartres. Finally, however, during the first half of the 13th century these calendar-scenes yielded their high positions to other figures, usually derived from the history of Christian-



Activities typical of the months. Left: Shearing sheep in June. Right: Breaking flax in November. Engravings from a series of month-pictures by Virgil Solis (1514-1562).

ity, and were relegated to a place nearer the ground: at Amiens they are found at the base of the porch as reliefs in foil-shaped frames. However that may be, the cycle of the year greeted the faithful on entering the church, which itself symbolized the timeless kingdom of God.

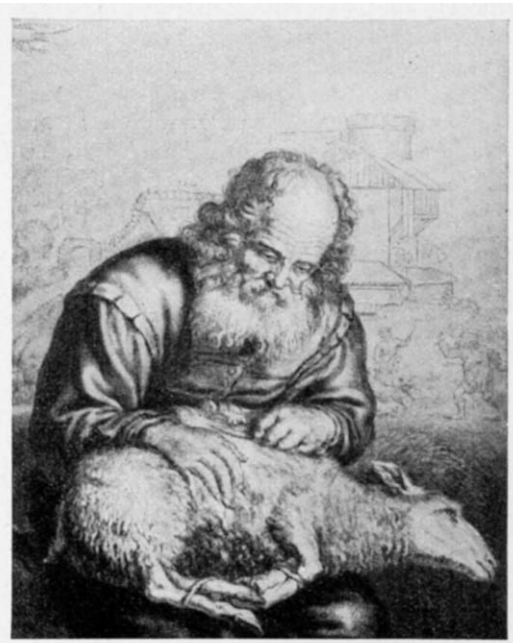
To link time and eternity, earth and heaven, that was the great object of Christian art. The labour of man's hands was to be made sacred. Therefore the Church depicted again and again the elementary human tasks, which found an expression comprehensible to all in the calendar pictures. When the churchgoer raised his eyes he would see in the stained-glass windows together with the astronomical signs of the Zodiac, and blazing in a variety of rich colours, the familiar scenes illustrating the cycle of the year with its various tasks. On opening his book of devotions at home, the Christian's eye would again be struck by the symbols of the Zodiac and the calendar pictures.

These books of devotion were among the most charming products of Gothic book-painting. They were intended for the laity, and were made—unlike the psalters and breviaries of the clergy—in the workshops of secular artists. The tendency towards realism, signs of which had shown themselves in book-painting of the Romanesque period, became particularly apparent in these prayer-books.

It was a trait of Gothic art, which became more and more pronounced in the course of development, to mingle an increasing vein of realism with its originally so severely stylized forms. It was an expression of the change in the conception of life. Cities had grown up, and the crafts were becoming an increasingly important factor in cultural life. Men's views became broader, and a new appreciation of Nature manifested itself. In the declining

Middle Ages the dawn of a new era, the Renaissance, was already to be felt. In the 15th century, especially in the Netherlands, those masterpieces of book-illustration were created, in which the life of the period is depicted with equal delicacy and realism, equal humour and piety, in the time-honoured but ever typical schema of calendar scenes. At the beginning of the 15th century, the Duke of Berry, the first art-collector in the modern sense of the word, ordered the brothers Paul, Jan, and Herman of Limburg, to execute for him an illuminated prayer-book, which, unfinished at

June. By Joachim von Sandrart. Sandrart's paintings of the months (1642-43) were very famous, and were reproduced by various etchers. Following traditional patterns the artist represented June as an old man shearing sheep. The engravings show a crab (Cancer) as the sign of the Zodiac. See top left.





November as the subject of a tapestry. On an English series of tapestries illustrating the months of the year and woven at the end of the 17th century, two months are united in each tapestry, November being symbolized by flax-breaking. The tapestry is signed by Thomas Poyntz. Section. Victoria and Albert Museum, London.

the time of the duke's death, was later completed by other hands. This book, preserved in the museum of Chantilly, is a truly monumental work, and entirely new in design. The calendar-scenes, which—after the manner of the horary—are at the beginning of the book, differ from any which preceded them. The activities illustrating the respective months are part of the composition of a homogeneous landscape, in which they have their places, instead of being simply working figures divorced from their surroundings. Each picture is surmounted by an arc with the sun in the centre in the form of a king riding in a chariot. The outer ring of the arc consists of a sphere with the two signs of the Zodiac to which the month belongs. Comparison with Arabian miniatures in manuscripts containing instructions how to make astronomical clocks, by Al

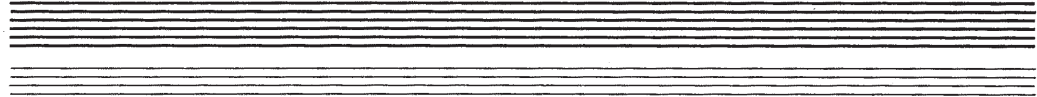
Gazari (1200), shows that the artistic conception of these calendar-pictures was derived by the Limburg brothers from the schema of Oriental water-clocks, which is itself of Hellenistic origin. The clocks described by Al Gazari had, above the dial, which was enlivened by the movements of automatic figures, a revolving disc, of which only half was visible at a time, and which bore the symbols of the Zodiac. Thus, Europe began once again to be influenced by the astrological lore of the East, though the pictures of the months as yet continued to be inspired by the scenes of rural life which presented themselves to the painter's eye. The artist did, however, add some genre scenes, which did not belong to the traditional canon. One scene, which about that time began to take its place among calendar illustrations, is that of sheep-shearing in July (see title page). The reason for this innovation was probably the rise of cloth-making in Flanders (cf. *Ciba Review* No. 14).

The next stage in the development is represented by the *Breviarium Grimani* in the library of St. Mark, Venice, a work in which the Gothic style is already tempered by modern elements. The painters were two Flemings, Alexander Bening (painting from 1469, died 1519) and his son Paul, who appears to have died not much later than his father. The illustrations of the calendar unify the scheme of composition adopted by the brothers Limburg. The connection with the Arab clocks appears to have been lost, as the sun chariot is simply placed in the sky. The crowning arc is replaced by a trefoil arch with tracery. On the other hand, the wealth of genre-like detail is increased. As well as the sheep-shearing scene there is a delightful January picture showing the interior of a house with a peasant woman spinning by the fireside (another activity connected with cloth-making); for September there is the leech bleeding a patient (see ill. p. 775) and for December a bread-baking scene.

At the end of the 15th century, calendars began to be printed, and wood-cuts became the most frequent form of illustration. For the numerous calendars popular illustrations of the months and the Zodiac developed, which were strongly coloured by astrological ideas. During the 16th century this astrological note grew stronger. Weather forecasts, medical prescriptions, and even prophecies, all based on astrology, became a matter of

course. The calendar illustration itself did not remain uninfluenced by this development. The activities representing the months changed or absorbed new elements, partly derived from the ancient belief in the influence on human life of the constellations of the Zodiac or the gods governing them, and partly based on the work of the different crafts. For November, for instance, which is under the sign of Sagittarius, flax-breaking, another item of the textile crafts, began to be a popular symbol, as may be seen from the works of Franz Brun and Virgil Solis during the 2nd half of the 16th century (see ill. p. 776). An English tapestry of as late a date as the outgoing 17th century, belonging to a series illustrating the cycle of the year, has flax-braking as its subject for November with Sagittarius in a medallion of the border (see ill. p. 777).

Gradually, however, the connection between Zodiac and human labour was forgotten; the seasonable occupations in the numerous series of 17th century engravings became increasingly vague, and scenes from Nature more and more important, with a few incidental human figures. The December scene of slaughtering pigs continued to be found for some time, and the German artist Sandrart, following traditional lines, reproduced some of the old scenes in a new form (see ill. p. 777); in time, however, the calendar illustrations became mere sentimental landscapes. The signs of the Zodiac, which the Baroque artists sometimes placed in a corner of their pictures, disappeared in the rococo age. When the months appear personified in the 18th century, it is without any mythological significance and solely as costume figures.



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Craftsmen as Children of the Planets

By W. Born

Among the questions which astrologers and those who dabbled in astrology were wont to put to the stars, those concerning the choice of a profession figured largely. If the life of the child was determined by the stars, what could be more natural than to map his professional career on that same authority?

The answer which astrology gave to the question, which profession was the best suited to a certain individual, depended—like all similar questions and their answers—on the planets. The principal problem was to decide which planet was decisive for the choice of a certain profession. The astrologers of the late Roman period had devised two principles for determining the significance of the planets in this respect. One of these, the mythological principle, consisted in ascribing to the planets the qualities of those gods whose names they bore; these qualities were then comparatively easily associated with certain professional aptitudes. The second principle was, in a measure, astronomical; the notions at that time current with regard to the greater or lesser size or warmth, etc., of individual planets, were associated with certain economic or social values. The connection between physical qualities of the planets and professional qualities in human beings could only be established by a very precarious system of associations, and even that did not suffice. In view of the intense interest aroused by astrology, a great number of people wished to share the secrets of the stars. The common man wished to know what fate was in store for him, even if it was not possible to have his horoscope prepared by a specialist in the art. He knew when he was born, and that had to suffice; from the constellation of the planets at that precise date and hour his future might be foretold. With the aid of a calendar which contained information on the position of the planets in the Zodiac, any man could find out which planets had governed the hour of his birth. The same authority could tell him about the advantages or disadvantages of the constellation in question. The missing link in the chain, information as to the significance of the planets for professional life, was supplied during the 15th century, when astrology became known to all classes of the people, by means of the pictures of the so-called “children of



Section of the frescoes in the Palazzo della Ragione. Below, probably a dress-maker. Giovanni Mireti, 15th century.

the planets”. These pictures, which originally took the form of book-miniatures, and which, thanks to wood-cuts and engravings, were

very widely circulated, show the planetary deities and the sections of the Zodiac governed by them; to these are assigned different human types, usually professional, but frequently accompanied by representatives of different social classes. Finally, the planets—like certain saints—came to be regarded as the patrons of different professions or groups of professions.

The late Roman astrologers, e.g. Vettius Valens, Antiochus, Firmicus, and Rhetorius, drew up whole catalogues of professions in their relations to the planets, without, however, coming to the same results. Their contradictory results can cause no surprise, if one considers the violent analogies employed to interpret the already fantastic, semi-mythological, semi-astronomical qualities attributed to the stars. The foundation of astrological teachings with regard to professions was Ptolemy's theory explaining the various ac-

Monks weaving baskets as children of Saturnus. Detail from an engraving formerly ascribed to Baccio Baldini. Florence, about 1460.



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Grinder. Detail of scenes from various crafts and trades in the frescoes of the Palazzo della Ragione.

tivities of man as a result of different forms of planetary radiation. This theory was followed up with remarkable pedantry; every trade and profession was astrologically codified, and even the professional organizations, the guilds, received similar attentions. As, furthermore, the "houses" of the Zodiac were also of vital importance in astrological computations, and in addition were believed to be particularly strong influences where the aptitude of the individual for particular professions was concerned, it will be readily believed that the analysis of all these forces by the astrologer was no mean feat.

Pictures of Planet Children

Together with the rest of Hellenistic astrology the theory of planetary professions was taken over by the Arabs, and considerably developed. It was apparently the Arabs who were the authors of the first pictorial reproductions of planetary professions, presumably under the influence of Hellenistic patterns. In a manuscript dating approximately from the year 1400, and containing the astrological system of Abû Mâcšar, who flourished in the 9th century, there are illustrations of the seven planets and beside them scenes depicting different trades.

Leather-workers
as children of
Saturnus.
15th century
German
book-miniature.
National Library,
Vienna.
After Hermann
J. Hermann.



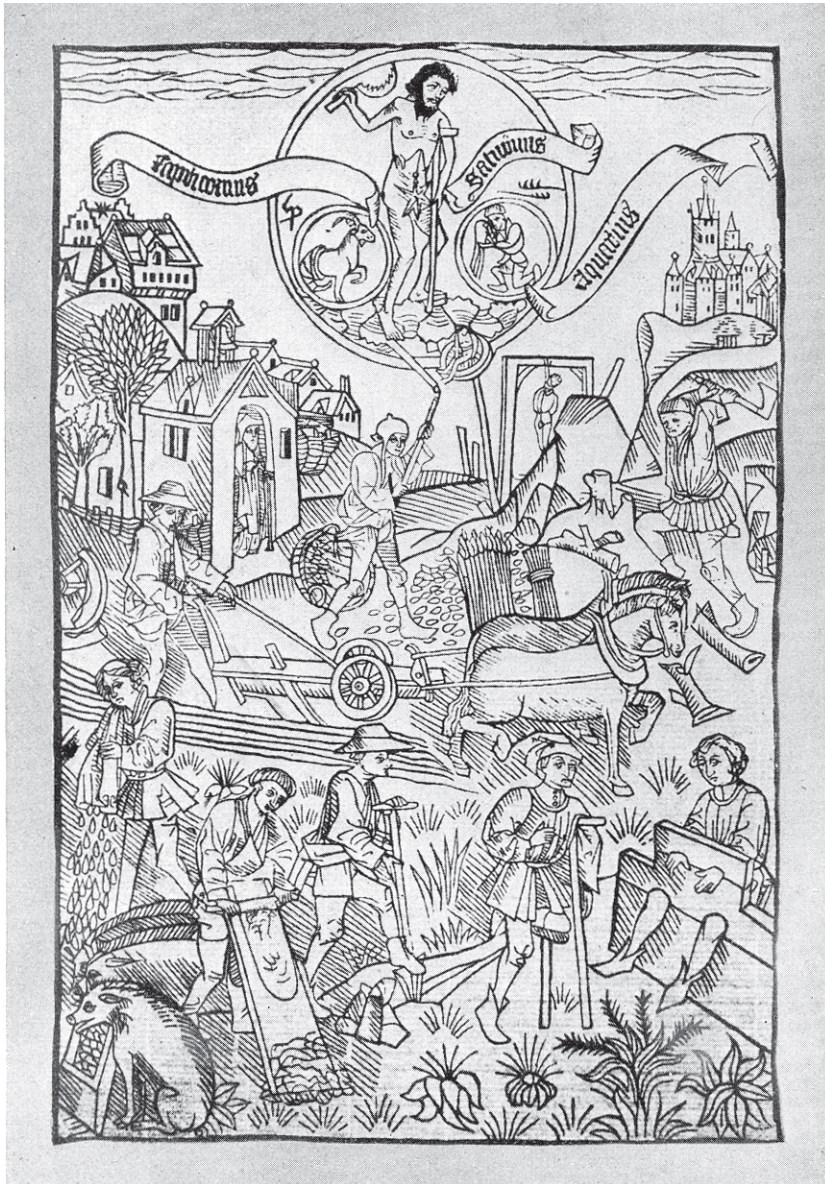
From the Arabs this novel kind of illustration first found its way to southern Europe, but soon spread over the Alps to the North, and was very popular in the late Gothic and early Renaissance periods.

On the walls of the Palazzo della Ragione, the Council Hall of Padua, known as the "Salone", Giovanni Mireti, a disciple of Giotto, painted with the assistance of his pupils over three hundred frescoes illustrating the astrological system prevalent in the 15th century (see ill. p. 780). It was here that the theme of

planet-children found its most monumental treatment, as did the astrological calendar at Ferrara. Mireti's series of frescoes consists of four rows, though the original arrangement has suffered greatly through later additions and incompetent renovation. The deities of the planets and the figures of the Zodiac are easily recognized, were it only by their size, as are the apostles, to each of whom a month is dedicated. In addition, each planet and each sign of the Zodiac is linked with scenes from some trade or profession. Some of these are

very easy to understand, as when a ship-wright is seen working under the sign of Aquarius; others again are very difficult, and can only be explained by the allegories, puzzling enough themselves, which fill the topmost row. It was Warburg who showed that these scenes signify paranatellonta (cf. p. 770) which, arranged according to decani (cf. p. 768), contributed "rays" which influenced men's professions. Various details in the scenes from the trades refer to these influences. The earliest known pictures of planet-children in the form of

book-illustrations are contained in a medico-astrological calendar dated 1404 of south German origin, which is preserved in the library of Tübingen. In this manuscript, the Oriental principle of placing separate pictures side by side is abandoned, though Mireti still adhered to it. Its place is taken by the principle of western art, the unification of the individual scenes to one whole. At this early stage of the development, the Gothic period, homogeneity was, however, not completely achieved. The intermediate links which led



*Tanner as child
of Saturnus.
Woodcut from a
Dutch block-book,
2nd half of 15th
century.*