often looked at it and wondered if the jeweller glued the white carving on to the black foundation. Well, no jeweller ever glued the one to the other, the two are just one stone, and it was God who made them one ages and ages ago. That stone was once a round lump in the hollow of a volcanic rock, and somebody found it and took it to the jeweller, and he cut it, oh so carefully; and then he carved out of the white layer that tiny delicate head; and the result was Granny's brooch, which she calls her 'cameo.' That is the name given to the figure cut on the stone.

Nowadays we do not admire the onyx so tremendously. Other jewels are more fashionable. But in olden times and in Bible days the onyx was highly prized. It was found in large pieces, so large that even cups have been cut out of a single block. It was tough, yet not too hard, and so lent itself to the engraver's tools. Its coloured layers allowed him to get a striking effect.

I wonder what the onyx stone has got to say to us? If it could speak I think it would like to tell us to be sure to get ourselves well engraved. It would say: 'Boys and girls, try to be beautiful like me. You are like the lump of stone when it comes from the rock. You can be made into almost anything. It all depends on how you are cut. Are you going to let yourself be spoiled by bad cutting? Are you going to let time and chance have their way and engrave on you images faulty, or distorted, or hideous? Or do you wish to be a beautiful gem, fit for a king's wear? Then go to Christ, the best Engraver, and ask Him to take you in hand. Ask Him to do the cutting and the polishing. Ask Him to take you and make of you what He will.'

Shall I tell you the result? Christ will grave on you His own pure image, and He will make of you a gem worthy to be worn in His own crown.

Assyro-Babylonian Astrologers and their Lore.

By Theophilus G. Pinches, LL.D., London.

Though astrology in the Old Testament has no special name, astrologers are nevertheless referred to. As examples take Dn 1^{20} 4^{4} (in the R.V. 4^{7}), etc.; but this is merely a provisional translation, the R.V. rendering of *ashshāph* (Bab. *ašippu* = *ashiffu*) being 'magician,' a much more correct translation. In all probability, therefore, it is the word *Chaldae* (also in Dn 4^{4}) which best expresses the idea of a student of the heavens, that being a speciality of the Chaldeans, either in the restricted tribal sense or with the wider meaning of the learned Babylonian class, skilled in predictions based upon the movements of the heavenly bodies. All the classes of scribes in Babylonia, however, must have had some knowledge of star-lore, whether for astronomical purposes or for foretelling coming events—or simply so as to communicate to their clients the interpretations of the astrological experts of the land.

As distinguished from astronomy, astrology owed its origin to the desire of people of old time to foretell the future. For the Babylonians, the heavenly bodies were not merely 'for signs, and for seasons, and for days and years,' they were also, and especially, tokens—messages even—of the gods to men. This was doubtless more strikingly the case when comets appeared and shooting stars were seen, for these were rare events, such as would attract the attention of primitive folk like the Babylonians at the beginning of their national career. The more orderly courses of the planets ultimately became the groundwork for forecasts of the events of everyday life and mundane history, based upon the assumption that what had already happened when the sun, moon, and planets occupied certain relative positions, might be expected again under like astral conditions.

A considerable time probably elapsed before the Assyro-Babylonians realized the need of records of their observations as data for foretelling events. If astrology had its origin, as is probable, before the development of the art of writing, that art had naturally to attain sufficient perfection to enable the details to be duly set out. The date of this development may be estimated at four or five thousand years before Christ, but the earliest

astrologers probably trusted to their memory: indeed, it is doubtful whether any systematic records of celestial happenings were made many centuries before the time of Sargon of Agadé (about 2800 B.C.), whose lunar omens and similar records are especially interesting.

It would therefore seem probable, that as chemistry is the offspring of alchemy, so astronomy is the child of astrology. Those who made the records for the purposes of deriving forecasts therefrom naturally came to know a great deal about the heavenly bodies, and a scientific study of their movements must have been the result. This naturally conflicts with the generally received opinion, that real astronomical observations were not made until the Persian period in Babylonia—an opinion due to the fact that the most systematic records of a really astronomical nature belong to that age. Their non-existence at an earlier date, however, is not provable, and is negatived by the details of the early forecasts. That the later records may have been much more detailed and exact than the earlier ones may, however, be assumed.

The results of the earlier observations, as recorded on the tablets, show that the Babylonians had recognized and given names to the planets, divided the heavens into constellations, traced the course of the sun through the signs of the Zodiac, and determined certain periods in connexion with the sun, moon, and the wandering stars. This, in the Semitic Creation-story, is attributed to Merodach:

'He built firmly the stations of the great gods—
Stars their likeness—he set up the *Lumaši*,
He designated the year, he outlined the constellations.
He set for the 12 months three stars each.
From the day when the year begins, for signs.
He founded the station of Nibiru (Jupiter) to make known their limits,
That none might err, nor go astray.
The stations of Enlila and Êa he placed with himself.
. . . . . .
Nannaru (the moon) he caused to shine, he delivered (to him) the night.
He set him then as the adornment of the night to make known the days.
Monthly, without failing, he endowed him with a tiara.
At the beginning of the month then, to lighten the land (?),
The crescent shineth constantly forth to announce 6 (?) days,
On the seventh day the tiara [perfect]ing.
The [Sa]bbath doth it then encounter, half-monthly.'

(The remaining extant lines, which are imperfect, deal with the sun and his path in the heavens.)

The British Museum tablet 81-7-27, 22 (discovered by Hormuzd Rassam), gives the following details:—

> Three months of the year, Nisan, Ab, and Chisleu, belonged to Akkad in the astrological tablets; three others, Iyyar, Elul, and Tebet, to Elam.; a third three, Sivan, Tisri, and Sebat, to Amurrū, the West-land; and finally Tammuz, Marcheswan, and Adar, to Subartu and Gutiu (Assyria and Media).

The night-time was divided into three watches, the first being that of the evening, which, in the event of an eclipse, referred to Akkad, the second was the middle-watch, which referred to Amurrū, the West-land, whilst the third was the morning-watch, indicating that the omen affected Elam.

The cardinal points were the south, the north, the east, and the west; the first pointing, in the case of an eclipse, to Elam, the second to Akkad, the third to Subartu and Gutiu, and the fourth to Amurrū.

After this the tablet speaks of the countries affected by the portions of the moon eclipsed. The right of the moon meant Akkad, the left Elam, the top of the moon Amurrū, and the back (bottom) of the moon Subartu and Gutiu.

Certain numbers come next, '13 standing for Akkad, 14 for Elam, 15 for Amurrū, and 16 for Subartu and Gutiu.

The next paragraph informs us that an eclipse of the evening indicated Akkad, the midnight-eclipse Subartu and Gutiu, and the morning eclipse Elam.

Such was the system of the Babylonian (and Assyrian) astrologers for determining the bearings of eclipses on the nations with whom they came into contact, and all other astrological indications may be regarded as having rested upon the same arbitrary basis.

Many tablets exist duplicating and confirming

these indications, one of the most important being the rather extensive series known to the earlier assyriologists as 'the illumination of Bel,' but which ought really to be called, from its opening words, 'When Anu-Enlilla.' This was a very complete series of illustrations of the way in which the recognized rules and explanations of the movements of the heavenly bodies, and the eclipses of the sun and the moon, with their oppositions and conjunctions, in every conceivable combination, were to be applied and interpreted; and the numerous reports of the astrologers of Assyria (and probably of Babylonia as well) show how constantly they were studied, committed to memory, and consulted. The following is a rough rendering of some of the instructions addressed to Babylonian astrologers:—

> 'Thou shalt acquire (a knowledge of) the 12 months of the year—the 360 days which is the amount from the New Year festival (to its end); the requirement for the estimating of daylight, for the observation of the stars, (and) for their mass (full number); the agreement of the beginning of the year with the star Dilgan (otherwise 'Babylon's water-channel'); the appearance of the moon and the sun for the month Adar and the month Elul. Thou shalt announce, thou shalt then send, the shining and the appearance (variant: shinings and appearances) of the moon monthly; the balancing of the stars and the moon thou shalt co-ordinate, and let it bring thee (reveal to thee) then the months of the year (and) the days of the month—send then whatever thou doest. . . . To determine the disappearance and the reappearance of the moon, lord of the month, and the year (Defective),[1] the 12 months thou shalt hold in thine hand; to determine the days . . . the balancing of the stars and the moon thou shalt hold in thine hand.' . . .

These directions are preceded by the titles of works (14 and 11, total 25) with which the student aspiring for the position of Astrologer in ancient Babylonia had to make himself acquainted.

This tablet afterwards gives the names of the months of the Babylonian year, with indications as to which of them are lucky or unlucky for the soldiers' entry into camp, starting on a military expedition, or for the defence of a city or country. Then come the watches of the night, the first or evening watch being unlucky, the middle watch lucky, and the third or morning watch unlucky, for speeding an army upon an expedition; and the first lucky, the second unlucky, and the third lucky for the capture of the city, the capture of a city and its army; and 'to plan an expedition the corresponding (times of) the day' were lucky.

Such were the first elements of his science which a prospective Babylonian astrologer had to master.

But in addition to the above, the astrologers of Babylonia and Assyria had to know the name-changes of the various heavenly bodies—a complication of their forecasts, for the great gods were identified with a different stellar deity in every month of the year. This, at least, is what we find indicated for Jupiter and Venus, and it is probable—indeed, almost certain—that the sun-god, the moon-god, Mars, Saturn, and Mercury changed their names in the same way.

As to the astronomical knowledge which was needed, he had to distinguish the seven *tikpi*, the seven *lumaši*, the seven *mâšu* or 'twin stars' (the Great Twins, the Little Twins, the Twins which stand before Sibzina, the stars Nin-šar and Ura-gal, otherwise Nergal and Aḫbitu[m], the stars Nabû and Lugal (Regulus), Šar-ur and Šargas, and, finally, Zibanna, otherwise Zibanitu[m], the Scales.

After this come the seven *Lu-bat-meš*, otherwise *Ṭḍusaṃune*, or planets, which may be repeated here on account of the order in which they occur, which is as follows:—

> 'Sin and Šamaš (the moon and the sun), Dun-sig-êa (Jupiter), Delebat (Venus), Udu-sumun-mul-Sag-uš (Saturn), Udu-sumun-gu-utu (Mercury), Muštabarrû-mûtânu (Mars), Seven planets.'

As the moon was regarded as existing before the sun, the name of Sin, the moon-god, comes first.

The tablet which identifies Merodach (Jupiter) and Ištar (Venus) with a different star or constellation for every month of the year, is the text, well known to assyriologists, which attributes to Venus not only a female, but also a male character

[1] A note by the scribe indicating that his original was damaged.

(*Western Asia Inscriptions*, vol. iii. pl. 58, 30 and 31b). The lines in question read as follows:—

'A star in the female stands (the goddess) Delebat at sunset;
A star in the male stands (the goddess) Delebat at sunrise.'

Though we have to read the phrases as Semitic, the wording is Sumerian (*sala-ta*, 'in the female'; *nitaḫa-ta*, 'in the male'); but the scribe has been so good as to translate these expressions for the reader—the first by *sinnišat* and the second by *zikarat*. That this double sexuality should have been always the case at sunset and sunrise seems strange, but it may refer to the influence which the planet Venus was regarded as having over births. Apart from the fact, however, that the power of controlling births was attributed to the moon, the planet Venus was regarded at some point of her course as developing a beard (*ziqnu zaqnat*)—a circumstance which suggests her identity with Tammuz, who, with the Babylonians, would seem not to have been like the beardless effeminate Adonis of the Greeks, but full-bearded, like the men of Babylonia.

The moon's influence with regard to births is shown by the following, taken from an astrological report:—

'If a halo surround the moon, and Regulus stand in the midst thereof, pregnant women will that year bear male children (*êrâti zakkâre ûlada*).'

The following refers to Ištaṛ or Venus being bearded:—

'If Delebat in the month Nisan develop a beard (*ziqnu zaqnat*), the people of the land will bear males. In the middle of that year tariff will be low. The growing beard (means) the beard to be bright (*ziqnu naḅâṭu*), she grows brilliant (*ba'lat*), she beams (*nibât*). Stars at sunset before her or by her side then stand.'

Here we seem to have a very clear explanation of what 'bearding a beard' means—it is when the brightness of Venus seems to be enhanced and she is accompanied by other stars. The succeeding lines have the omens for the remaining months of the year in the same conditions, except that the stars accompanying Venus are in certain cases the other planets.

The study of astrology (or astronomy) gave the Assyro Babylonians quite a number of words for 'to shine,' and kindred ideas. Naturally Delebat or Venus was admired on account of her brightness, and many of the words expressing the idea explain the group which forms her name. These are furnished by the Constantinople tablet S. 82, which is one of those excavated by Professor Scheil. The words are *namâru*, 'to shine,' *nipṭu*, 'brilliance,' *šaruru*, 'glory,' *nadû*, 'to throw down' (beams), *maqâtu*, 'to fall' (of beams), and *nipṭa ûbilu* (?), 'it brought brilliance,' this last being apparently an explanation of the two immediately preceding.

That the planets and other heavenly bodies bear names in Sumerian and Akkadian corresponding with those in use at the present time shows that modern astronomy owes much to the ancient Babylonians as pioneers in that science. In addition to these, however, we are almost entirely indebted to them for the names of the signs of the Zodiac and certain other constellations of the northern hemisphere. In this connexion may be mentioned here a little tablet inscribed with 12 lines of writing—8 on the obverse and 4 on the reverse—each of which has the simple ideograph standing for the successive months of the Babylonian year, followed by the character *te* and the name of a group of stars. This use of *te* as a determinative prefix is due to the fact that when it has the value *gal*, 'evil spirit,' it is a homophone of *gal*, 'star' or 'constellation,' which is generally represented by the cuneiform hieroglyph composed of three stars, best known under its dialectic form, *mul*, also pronounced *wul*, and still further weakened to *ul*.

The following is the text of this interesting list:—

1. Nisan	The hired man	The Ram.
2. Iyyar	The Luminary and the Bull of Heaven	The Bull.
3. Sivan	The eternal heavenly Herdsman and the Great Twins	The Twins.
4. Tammuz	*Allul*	The Crab.
5. Ab	The great Dog (*i.e.* the Lion)	The Lion.
6. Elul	The Ear of Corn	The Virgin (Spica).
7. Tisri	The Scales	The Scales.
8. Marcheswan	The Scorpion	The Scorpion.
9. Chisleu	*Pa-pil-sag*	The Archer.
10. Tebet	The Goat-fish	The Goat.
11. Sebat	The Watering-Machine	The Amphora.
12. Adar	The Watering-Channel and the Tails	The Fishes.

In the inscriptions of late date, all these are abbreviated, and reduced to a single character. The first Zodiac constellation, therefore, has not to be identified, as has been hitherto done, with 'the *kusarikku*-fish,' but is the *âg(i)ru*, 'hired man,' or *sikaru*, 'man,' of the bilingual lists. As the month Nisan is for *nig-sang*, 'that which is first,' the question naturally arises whether the first sign of the Zodiac stands also for the same idea. If that be the case, 'the man' or (agricultural) 'workman' was in all probability the first man created, namely, Adam, as a type of the earliest occupation of the human race. It was not until later that the wonderful amphibious creatures came forth from the Persian Gulf to teach the Babylonians letters and the arts belonging to the domain of higher civilization.

It will be noticed that some of the Zodiac constellations have two component parts (see the second and third on the list), and in these cases it is the latter of the two whose name has survived in modern astronomical lore. In the case of the twelfth, there is no suggestion of 'fishes' unless it be in the former half, *iku*, 'the water-channel.' It is not impossible, however, that the character for 'tail,' *gun*, may have expressed some special kind of fish. A kind called *gun-zi*, provided with the prefix for 'fish,' occurs in Thureau-Dangin's *Recueil de Tablettes Chaldéennes*, Nos. 213 and 214.

With regard to the other signs, *Allûl* should mean 'crab,' as in the Zodiacal names still in use. *Šittu*^{m}, which is the only Semitic pronunciation for *Allul* known, is regarded as meaning 'misery,' 'distress,' 'sin,' etc. The crab may have been looked upon as a causer of misery—a tormentor—but it is hardly likely that this was his name.

Another problematic but interesting name is that of Pa-pil-sag, corresponding with the Archer. With the determinative prefix for 'god,' this celestial personage was worshipped, with other stellar deities, in the temple of Gula, goddess of healing, at Aššur. His name also occurs, in the same line with Nebo, in a list of 16 deities likewise worshipped at Aššur, and described as the companions of Aššur, the patron god of that city. The first character of the name, *pa*, is one of the ideographs for Nebo, and raises the question whether Pa-pil-sag may not have been identified with that deity. Or is his name a fuller form of Pa-saga, otherwise I-šum, 'the glorious sacrificer,' the gods' great guardian angel, who watched over the sick? In any case, Pa-pil-sag was the spouse of Gula, the goddess of healing. He was identified with En-urta, who, like Hadad-Rimson, was a storm deity, and we may have here an explanation of his name: 'the man or god (*pa*) fiery (*pil*) of head (*sag*)'—'he of the thunderbolt.' Among the gods of the city of Aššur associated with the god of the same name, we see *Adad*, *Birqu*, 'Hadad Lightning' on the same line, and again, lower down, *Gibil birqu*, 'Firegod-lightning.' Identified with En-urta, he became also equivalent to the god Mermer, indicated as the four divine winds rushing towards each other—an additional proof that Pa-pil-sag was the god of the storm, and, as such, the 'archer' of the sky, god of the thunderbolt.

Earlier texts give other details, showing noteworthy and interesting changes, but these need special treatment. The number of the tablets, however, whether early or late, shows that the astrologers of Babylonia and Assyria were well provided with material for their special study. The reverence with which the Assyrians regarded the heavenly bodies is shown, among other texts, by the tablet giving the gods of the temples of the city of Aššur, referred to above. The last section of this important inscription speaks of the stars as well as of the gods before whom the king made sacrifices. Also, 'Ištar of the stars' was one of the deities of the temple of Gula in that city.

Literature.

MRS. HUMPHRY WARD.

'Do we all become garrulous and confidential as we approach the gates of old age? Is it that we instinctively feel, and cannot help asserting our one advantage over the younger generation, which has so many over us?—the one advantage of *time*!'

Thus Mrs. Humphry Ward begins her autobiography, *A Writer's Recollections* (Collins; 12s. 6d. net). It is a risky beginning, so many persons 'with the one advantage of time' do become