

to think that it is a plausible explanation of two words which otherwise would be meaningless, and I was glad to find that I had been anticipated in it by a native scholar, Mr. Narayan Aiyangar, of Bangalore. *Annāda* means an infant; and in most cases where the word occurs in an Upanishad one may suspect reference to legends or myths of some kind.

L. D. BARNETT.

As the question of the negative *a* with finite verbal forms is of considerable interest, I may perhaps offer one or two remarks. The *vārttika*, on which Dr. Barnett relies, is certainly later, and in my opinion much later, than Pāṇini, who certainly cannot have known the usage, and even it does not go so far as to give an instance of a negative with a subjunctive. The construction probably originated with such simple cases as present indicatives. In view of the absolute uncertainty of the date of the passages of the *Mahābhārata*, to which reference is made, it is not possible to prove for Sanskrit that the use is pre-Pāṇinian, for the later writers no doubt conceived the *vārttika* as being sufficient justification, and I am afraid that it is premature to argue from the Pāli or Prākṛit examples.

But, whatever the history of the usage, it still seems to me extremely doubtful whether we should accept what would be an unprecedented form, a subjunctive with a negative *a*, in a work which is most probably anterior to Pāṇini, especially when the meaning obtained by this interpretation is distinctly inferior to that suggested by the passage in the *Bṛhadaranyaka Upanishad*, iv, 4, 5, referred to on p. 496 of the review. The Suvarṇasthīvin legend appears to me to throw no light on the passage in question.

A. BERRIEDALE KEITH.

#### A REMARKABLE VEDIC THEORY ABOUT SUNRISE AND SUNSET.

Thibaut, in his sketch of Indian Astronomy, Astrology, and Mathematics in Bühler's *Grundriss* (iii, 9), makes

mention of what he calls an interesting statement of the Aitareya Brāhmaṇa about what really happens when people think the sun rises or sets. "Interessant ist die Angabe des Ai. Brā. (iii, 44), dass die Sonne wirklich weder auf- noch untergeht, sondern dadurch dass sie sich umdreht, in den unteren Regionen, d.h. auf der Erde, abwechselnd Tag und Nacht hervorbringt." I cannot refrain from adding that the importance of this statement would be greater if its meaning were more perspicuous. As it is laid down here, it seems to explain a mystery by an enigma. Thibaut himself adds: "Wie die Sonne vom Westen zum Punkte des Anfangs zurückkehrt, darüber geben die vedischen Texte keinen Aufschluss."

Haug, the first editor of the Aitareya Brāhmaṇa, who has also translated it (1863), was himself struck by this theory. "This passage," so he writes in a note on his translation of it, "is of considerable interest, containing the denial of the existence of sunrise and sunset. The author ascribes a daily course to the sun, but supposes it to remain always in its high position on the sky, making sunrise and sunset by means of its own contrarieties." But Haug does not add of what kind these contrarieties are to be considered. Nor does this appear from the actual words of the text in his translation, which, for this reason, I transcribe here in full :

"The sun does never rise nor set. When people think the sun is setting (it is not so). For after having arrived at the end of the day it makes itself produce two opposite effects, making night to what is below and day to what is on the other side.

"When they believe it rises in the morning (this supposed rising is thus to be accounted for). Having reached the end of the night, it makes itself produce two opposite effects, making night to what is below and day to what is on the other side."

I fully agree with both distinguished scholars that this doctrine, which is so entirely contrary to the common and popular belief—of the Vedic mantras, too—that night and

day are caused by the sun's alternative setting and rising, is highly interesting. Perhaps I may help to the solution of the puzzle, and try to improve the understanding of that which the old ṛṣi whose doctrine is embodied in Ait. Br., iii, 44, meant by stating that Sūrya 'produces two opposite effects' (Haug) or 'revolves' (Thibaut). For this reason I put here the original text of the passage from the edition of Aufrecht (1879), p. 89 :—

“Sa vā esha na kadā canāstam eti nodeti [iii, 44] 7 tam yad astam etīti manyante, 'hna eva tad antam itvāthātmanāṃ viparyasyate, rātrīm evāvastāt kurute 'haḥ parastāt 8 atha yad enam prātar udetīti manyante, rātrer eva tad antam itvāthātmanāṃ viparyasyate, 'har evāvastāt kurute rātrīm parastāt 9.”

Here two uncertainties are to be settled. Firstly, Haug and Thibaut accept the sentence *athātmanāṃ viparyasyate* differently: the former, as he translated 'it makes itself produce two opposite effects,' considered the sentence next following, *rātrīm evāvastāt*, etc., to be nothing else but the detailed exposition of what was already concisely contained in the *viparyāsa*; the latter, who renders *ātmanāṃ viparyasyate* by 'sie dreht sich um,' cannot but see in what follows the necessary result of the *viparyāsa*. Secondly, Haug renders *parastāt* by 'what is on the other side,' whereas Thibaut deliberately, it seems, has avoided to mention that rather ambiguous adverb in the brief account he gives of the theory.

I think *parastāt* must needs mean here 'what is on high.' It is directly contrasted with *avastāt*, 'below.' But how may it be that Sūrya by his *viparyāsa* causes at the same time day on the earth and night in the upper regions, and inversely? Why, we must suppose the sun has a bright front-side and a dark back-side. During the daytime he keeps his bright side to the regions below—hence the sunlight illustrates this earth and the things on it—but his dark side to the regions on high—hence the other luminaries are obscured and cannot be seen on earth. At the end of the day, having reached the western *meta* of his daily course,

he turns himself to the other side and returns to the eastern *meta*, having his bright side opposed to the upper regions and his dark side to the earth; hence it is dark here, but the objects in the sky become visible; and this state of things lasts until the sun, reaching the eastern term of his course, turns his body again to bring the benefit of his light once more to the regions below, making night on high. In this manner the old ṛṣi whose doctrine has been preserved to us in the Ait. Br. expresses himself in plain and intelligible terms. The exegesis of his words is also in plain accordance with the incontestable meanings of *parastāt* and *viparyasyate*.

That which has obscured the true insight in catching the purport of the statement is Sāyaṇa's commentary. It is a common feature in the method of Hindu scholiasts and exegetes to judge and interpret everything from the point of view of their own orthodox tenets. Sāyaṇa, therefore, understands *ātmanam viparyasyate* as referring to the dogma, universally accepted in his own days and long before, that the sun in his daily course is circumambulating Mount Meru. *Sūryaḥ . . . svātmānam viparyasyate | viparyastam karoti | katham viparyāsa iti | sa ucyate | avastād atīte deḥe rātrim eva kurute parastād āgāmini deḥe 'haḥ kurute | ayam arthaḥ | Meroḥ pradakṣiṇam kurvann ādityo yaddeḥavāsīnām prāṇinām dr̥shṭipatham āgacchati taddeḥavāsibhir ayam udetīti vyavahriyate | yaddeḥavāsīnām dr̥shṭipatham atikramya sūrye gate sati sūryo 'stam etīti taddeḥavāsibhir vyavahriyate* (Aitar. Brāhm., ed. Aufrecht, p. 301). But Mount Meru does not play any part in the speculations of the Brāhmaṇas, and is, in fact, absent from the whole Vedic literature. Further, even if it be granted that Sāyaṇa's gloss operates with *parastāt* and *viparyasyate* within the legitimate sphere of the employment of these words, his explaining *avastāt = atīte deḥe* is forced and something made *par besoin de cause*. There is no question here of the sun shining successively on different tracks of the surface of our earth, but of its making by its *viparyāsa* day and night alternatively at the same spot. So Sāyaṇa's explanation of the passage must be put aside.

We, however, who are not bound to the standard of Hindu orthodox tenets are free to contemplate this old Vedic theory in the light of its own time, as it appears to us by the help of a strict philological method of interpretation. At the time when this brāhmaṇa, revealing the real causes of sunrise and sunset, was composed for the few, the many—they may or may not have known of Mount Meru—believed in the *udayana* and *astamayana* of the Deva Sūrya. The Brahmanical philosopher, the holy ṛṣi, whose statement has been preserved in this remarkable passage, disbelieved that creed of the many. His esoteric revelation, however, about the true causes of sunrise and sunset is a rationalistic interpretation and nothing more. The interest of it consists in the fact that we have here a very early endeavour of Indian thought to explain physical phenomena by means of pure reasoning, by *tarka*, without the usual metaphysical and theosophical bias. Primitive as it is, this theory has a claim to be considered to give a more scientific answer to the question it pretends to solve than where this answer is given in the ordinary way of the Brāhmaṇas, e.g. Ait. Br., 8, 28, 9: *ādityo vai astam yann agnim anupraviṣati so 'ntardhīyate*, etc.

For the rest, the doctrine expounded was of little or no consequence, it seems. Nor is it mentioned, as far as I know, in any other Vedic text. It does not stand in connection with any ceremony or other religious act. Yet it may be observed that the supposed returning course of the sun at night, from the west to the east through the south, according to this theory, agrees very well with the religious practices always followed in the ritual pertaining to the *pitaras*, to Rudra, in the *abhicāra*-rites, and in all other performances which have in view the beings and spirits of night and darkness.

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*Leiden.*