somewhat different from the earlier ones, and Dr. Budge says the theory is strengthened by the fact that "archæological considerations indicate that the pyramids which have different orientations belong to different periods."

Prof. C. Piazzi Smyth, as you probably all know, wrote a book on "Our Inheritance in the Great Pyramid," in which he insisted that it was a measure of the polar diameter of the Earth, and was intended as a standard of weights and measures. It seems, however, thoroughly established that it is so oriented that the passage points due north, at an angle which Col. Howard Vyse measured as 26° 41′. Sir John Herschel calculated that in 2,121 B.C. the star α Draconis was the Pole star, and that its lower culmination was then 26° 15′ 45″. As the annual precession in north polar distance in that part of the sky is 18″, the date of the orientation, supposing Col. Vyse's measure to be exact, was 83 years before, or 2,204 B.C.

According to Dr. F. C. Penrose, Greek temples were similarly oriented, and in the same number of the *Proceedings* of the Royal Society he gives several new instances. Three of the temples he has thus surveyed are oriented to α Arietis, rising; two to Spica rising; one each to α Pegasi setting and α Leonis rising. To illustrate the method of investigation I transcribe one :—

| Name of Temple. | Orientation Angle. | | Stellar Elements. | Solar Elements. | Name of Star. |
|---|---|---|---|---|---|
| The new Erechtheum. | 265° 9′ | A. Amplitude of star or Sun. | + 6° 30′ E | + 7° 20′ E | α Arietis rising |
| | | B. Corresponding altitude.. | 4° 0′ | 3° 25′ | |
| | | C. Declination ..... | + 10° 35′ | − 7° 34′ | |
| | | D. Hour angles . .... .... | 6h. 13m. | 7h. 26m. | |
| | | E. Depression of Sun when star heliacal ..... | ..... | 12° | |
| | | F. R. A..... | 23h. 58m. | 1h. 11m. | |
| | | G. Approximate date ..... | 445 B.C. | April 9 | |

In the case of temples the star would shine through some opening in the wall into the adytum at the date of the festival with which the temple was connected.

The Greeks took lessons in astronomy from the Egyptians, and perhaps from the Assyrians, and in due course became the teachers of the