

cumbrous Sexagesimal Arithmetic of the Greeks, and introducing the notation by means of the digits 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, which we now employ.⁴⁶ These numerals appear to be of Indian origin, as is acknowledged by the Arabs themselves; and thus form no exception to the sterility of the Arabian genius as to great scientific inventions. Another improvement, of a subordinate kind, but of great utility, was Arabian, being made by Albategnius. He introduced into calculation the *sine*, or half-chord of the double arc, instead of the chord of the arc itself, which had been employed by the Greek astronomers. There have been various conjectures concerning the origin of the word *sine*; the most probable appears to be that *sinus* is the Latin translation of the Arabic word *gib*, which signifies a fold, the two halves of the chord being conceived to be folded together.

The great obligation which Science owes to the Arabians, is to have preserved it during a period of darkness and desolation, so that Europe might receive it back again when the evil days were past. We shall see hereafter how differently the European intellect dealt with this hereditary treasure when once recovered.

Before quitting the subject, we may observe that Astronomy brought back, from her sojourn among the Arabs, a few terms which may still be perceived in her phraseology. Such are the *zenith*, and the opposite imaginary point, the *nadir*;—the circles of the sphere termed *almacantars* and *azimuth* circles. The *alidada* of an instrument is its index, which possesses an angular motion. Some of the stars still retain their Arabic names; *Aldebaran*, *Rigel*, *Fomalhaut*; many others were known by such appellations a little while ago. Perhaps the word *almanac* is the most familiar vestige of the Arabian period of astronomy.

It is foreign to my purpose to note any efforts of the intellectual faculties among other nations, which may have taken place independently of the great system of progressive European culture, from which all our existing science is derived. Otherwise I might speak of the astronomy of some of the Orientals, for example, the Chinese, who are said, by Montucla (i. 465), to have discovered the first equation of the moon, and the proper motion of the fixed stars (the Precession), in the third century of our era. The Greeks had made these discoveries 500 years earlier.

⁴⁶ Mont. i. 876.