literary composition are very numerous. Indeed, a subject of this description—involving such nice distinctions as regards the various kinds of poetic composition, the particular subjects and characters adapted for them, and the different sentiments or mental condi- tions capable of being both depictured and called forth by them— could not but be congenial to the Indian mind. H. H. Wilson, in his *Theatre of the Hindus,* has given a detailed account of these theoretic distinctions with special reference to the drama, which, as tho most perfect and varied kind of poetic production, usually takes an important place in the theory of literary composition. The *Bharata-śâstra* has already been alluded to as probably the oldest extant work in this department of literature. Another comparatively ancient treatise is the *Kâvyâdarśa, @@1* or “mirror of poetry,” in three chapters, by Dandin, the author of the novel Dasakumaracharita, who probably flourished not long after Kalidasa (whose Prakrit poem Setubandha he quotes) in the 6th century. The work consists of three chapters, treating—(1) of two different local styles *(rîti)* of poetry, the Gaudi and the Vaidarbhi (to which later critics add four others, the Pânchâlî, Magadhî, Lati, and Avantika); (2) of the graces and ornaments of style, as tropes, figures, similes; (3) of alliteration, literary puzzles, and twelve kinds of faults to be avoided in composing poems. Another treatise on rhetoric, in Sutras, with a commentary entitled *Kâvyâlankâra-vritti,* is ascribed to Vamana. Prof. Cappeller, to whom we owe an edition of this work, is inclined to fix it as late as the 12th century ; but it may turn out to be somewhat older. The *Kâvyâlankâra,* by the Kashmirian Rudrata, must have been composed prior to the 11th century, as a gloss on it (by Nami), which professes to be based on older commentaries, was written in 1068. Dhananjaya, the author of the *Daśa- rûpa, @@2* or “ten forms' (of plays),” the favourite compendium of dramaturgy, appears to have flourished in the 10th century. In the concluding stanza he is stated to have composed his work at the court of King Munja, who is probably identical with the well- known Malava prince, the uncle and predecessor of King Bhoja of Dhârâ. The Daśarûpa was early commented upon by Dhanika, possibly the author’s own brother, their father’s name being the same (Vishnu). Dhanika quotes Rajasekhara, who is supposed to have flourished about 1000 **A.D., @@8** but may after all have to be put somewhat earlier. The *Sarasvatî-kanthâbharana,* “the neck- ornament of Sarasvati (the goddess of eloquence),” a treatise, in five chapters, on poetics generally, remarkable for its wealth of quotations, is ascribed to King Bhoja himself (11th century), pro­bably as a compliment by some writer patronized by him. The *Kâvya-prakâsa, @@4* “the lustre of poetry,” another esteemed work of the same class, in ten sections, was probably composed in the 12th century,—the author, Mammata, a Kashmirian, having been the maternal uncle of Sri-Harsha, the author of the Naisliadhiya. The *Sdhitya-darpana, @@5* or “mirror of composition,” the standard work on literary criticism, was composed in the 15th century, on the banks of the Brahmaputra, by Viśvanatha Kavirâja. The work consists of ten chapters, treating of the following subjects :—(1) the nature of poetry ; (2) the sentence ; (3) poetic flavour (rasa) ; (4) the divisions of poetry ; (5) the functions of literary suggestion ; (6) visible and audible poetry (chiefly on dramatic art); (7) faults of style ; (8) merits of style ; (9) distinction of styles ; (10) ornaments of style.

VIII. Medicine *(Âyur-veda, Vaidya-śâstra).—*Though the early cultivation of the healing art is amply attested by frequent allu­sions in the Vedic writings, it was doubtless not till a much later period that the medical practice advanced beyond a certain degree of empirical skill and pharmaceutic routine. From the simultaneous mention of the three humours (wind, bile, phlegm) in a vârttika to Panini (v. 1, 38), some kind of humoral pathology would, however, seem to have been prevalent among Indian physicians several centuries before our era. The oldest existing work is supposed to be the *Charalca-sarphitd, @@6* a bulky cyclopaedia in ślokas, mixed with prose sections, which consists of eight chapters, and was probably composed some centuries after Christ. Of equal authority, but probably somewhat more modern, is the *Suśruta* (-*samhitâ*), @@7 which Susruta is said to have received from Dhanvantari, the Indian AEsculapius, whose name, however, appears also among the “nine gems” (c. 550 **A.D.).** It consists of six chapters, and is likewise composed in mixed verse and prose,—the greater simplicity of arrangement, as well as some slight attention paid in it to surgery, betokening an advance upon Charaka. Both works are, however, characterized by great prolixity, and contain much matter which has little connexion with medicine. The late Prof. B. Haas, in two very suggestive papers, @@8 tried to show that the work of Susruta

(identified by him with Socrates, so often confounded in the Middle Ages with Hippocrates) was probably not composed till after the Mohammedan conquest, and that, so far from the Arabs (as they themselves declare) having derived some of their knowledge of medical science from Indian authorities, the Indian Vaidyaśastra was nothing but a poor copy of Greek medicine, as transmitted by the Arabs. But even though Greek influence may be traced in this as in other branches of Indian science, there can be no doubt, @@9 at any rate, that both Charaka and Susruta were known to the Arab Razi (c. 932 **A.D.),** and to the author of the Fihrist (completed 987 a.d.), and that their works must therefore have existed, in some form or other, at least as early as the 9th century. Among the numerous later medical works the most important general compendiums are Vagbhata’s *Ashtânga-hridaya,* “the heart of tho eight-limbed (body of medical science),” and Bliava Misra’s *Bhâva-prakâśa*; while of special treatises may be mentioned Madhava’s system of nosology, the *Rugviniśchaya,* or *Mâdhâva-nidâna,* and Sarngadhara’s compendium of therapeutics, the *Sârngadhara-samhitâ.* Materia medica, with which India is so lavishly endowed by nature, is a favourite subject with Hindu medical writers,—the most valued treatise being the *Râja-nighantu,* by the Kashmirian Narahari. The best general view of this branch of Indian science is continued in T. A. Wise’s *Commentary on Hindu Medicine,* 1845, and in his *History of Medicine,* vol. i., 1867 ; but the whole subject, including the principal original works, still awaits a critical investigation.

IX. Astronomy and Mathematics.—Hindu astronomy may be broadly divided into a pre-scientific and a scientific period. While the latter clearly presupposes a knowledge of the researches of Hipparchus and other Greek astronomers, it is still doubtful whether the earlier astronomical and astrological theories of Indian writers were entirely of home growth or partly derived from foreign sources. From very ancient (probably Indo-European) times chronological calculations were based on the synodical revolutions of the moon,—the difference between twelve such revolutions (making together 354 days) and the solar year being adjusted by the in­sertion, at the time of the winter solstice, of twelve additional days. Besides this primitive mode the Rigveda also alludes to the method prevalent in post-Vedic times, according to which the year is divided into twelve *(sâvana* or solar) months of thirty days, with a thir­teenth month intercalated every fifth year. This quinquennial cycle *(yuga)* is explained in the *Jyotisha,* regarded as the oldest astronomical treatise. An institution which occupies an important part in those early speculations is the theory of the so-called lunar zodiac, or system of lunar mansions, by which the planetary path, in accordance with the duration of the moon’s rotation, is divided iuto twenty-seven or twenty-eight different stations, named after certain constellations *(nakshatra)* which are found alongside of tho ecliptic, and with which the moon (masc.) was supposed to dwell successively during his circuit. The same institution is found in China and Arabia; but it is still doubtful @@10 whether the Hindus, as some scholars hold, or the Clialdseans, as Prof. Weber thinks, are to be credited with the invention of this theory. The principal works of this period are hitherto known from quotations only, viz., the *Gârgi Samhitâ,* which Prof. Kern would fix at c. **50 B.C.,** the *Nâradi Samhitâ,* and others.

The new era, which the same scholar dates from c. 250 **A.D.,** is marked by the appearance of the five original Siddliantas (partly extant in revised redactions and in quotations), the very names of two of which suggest Western influence, viz., the *Paitâmaha-, Sûrya-, @@11 Vasishtha-, Romaka- (i.e.,* Roman), and *Pauliśa-sid- dhdntas.* Based on these are the works of the most distinguished Indian astronomers, viz., Aryabhata, @@12 probably born in 476 ; Varâha-mihira, @@13 probably 505-507; Brahma-gupta, who completed his *Brahma-siddhânta* in 628; Bhatta Utpala (10th century), distinguished especially as commentator of Varaha-mihira ; and Bhaskara Acliarya, who finished his great course of astronomy, the *Siddhânta-siromani,* in 1150. In the works of several of these writers, from Aryabhata onwards, special attention is paid to mathematical (especially arithmetical and algebraic) computa­tions ; and the respective chapters of Bhaskara’s compendium, viz., the *Lîlâvatî* and *Vija-ganita, @@14* still form favourite textbooks of these subjects. The question whether Aryabhata was acquainted with the researches of the Greek algebraist Diophantus (c. 360 a.d.) remains still unsettled ; but, even if this was the case, algebraic science seems to have been carried by him beyond the point attained by the Greeks. **(J· E.)**

@@@1 Ed. with commentary, by Premachandra Tarkabäglsa, *Bibl. Ind.*

@@@2 Edited by Fitzedw. Hall, *Bibl. Ind.,* 1865.

@@@3 R. Piachel, *Cott. Gel. A.,* 1883; G. Buhler, *Ind. Ant.,* 1834, p. 29.

@@@4 Ed. by Mahesft Chandra Nyâyaratna, 1866.

@@@5 Text and translation in *Bibl. Ind.*

@@@6 Ed. by Jibananda Vidyasagara, Calc., 1S77.

@@@7 Ed. by Madhusüdana Gupta, 1835-37, and by Jibananda Vidyasagara, 1873.

@@@8 *Z. D. II. G.,* 1876, p. 617 *sq.*; 1877, p. 647 *sq.*

@@@9 See Prof. Aug. Muller's paper, *Z. D. M. G.,* 1880, p. 465.

@@@10 See especially Prof, whitney’s essay on the Lunar Zodiac, in his *Oriental and Linguistic Studies.*

@@@11 The *Sjirya-siddhanta,* translated by (IV. F>. Whitney and) E. Burgess, 1S60.

@@@12 The *Aryabhatiya,* edited by H. Kern, 1874.

@@@13 The *Brihat-samhitd* and *Vogaydtra,* edited and translated by H. Kern; the *Laghu-jdtaka,* edited by A. weber and H. Jacobi.

@@@14 A translation of both treatises, as well as of the respective chapters of Brahma-gupta’s work, was published (1817) by H. T. Colebrooke, with an important “ Dissertation on the Algebra of the Hindus,” reprinted in the *Misc. Essays, i*i. p. 375 *sq.*