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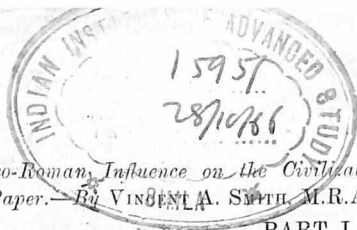
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Græco-Roman Influence on the Civilization of Ancient India. Second Paper.—By VINCENT A. SMYTH, M.R.A.S., BENGAL CIVIL SERVICE.

PART I.

While my essay on 'Græco-Roman Influence on the Civilization of Ancient India,' published in Part I of this Society's Journal for 1889, was passing through the press, two important papers bearing on the same subject appeared, one in France, the other in Germany. I propose to give in this communication some account of the papers referred to, and to discuss the views of the writers, especially when they differ from those which I have advocated.

The French essay is written by Mr. E. Senart, and is entitled 'Notes d'Épigraphie Indienne.*' The veteran Professor Albrecht Weber is the author of the German paper, to which he has given the name of 'Die Griechen in Indien.†

Mr. Beveridge, our President, in his Annual Address remarked that Professor Weber's discourse "well deserves to be translated." It is beyond doubt a valuable contribution to learning, but I think an abstract account of its contents, accompanied by a discussion of doubtful topics, will be of more interest to the Society than a formal complete translation.

Professor Weber concentrates his attention almost exclusively on the literary monuments of ancient Indian civilization, and devotes only a few lines to the subject of Hellenistic influence on the architecture, sculpture, and numismatic art of India, (pp. $\frac{16}{912}$, $\frac{17}{913}$).‡ He laments the want of works dealing more fully with these topics. I trust that I may, without presumption, claim to have partly supplied this want.

In a much discussed passage of the Mahābhāṣya, which mentions that the avaricious Maurya king offered for sale the images of the gods, he is inclined to see the first reference in Indian literature to coined money. But this is a very dubious and far-fetched notion.

The remarks on the words *Dramma*, *δραχμή*, and *dínāra*, *δηνάριον*, are worth translating in full.

"The words *dramma*, *δραχμή*, and *dínāra*, *δηνάριον*, in the special sense of silver and gold money respectively, remained in use as late as

* Extrait du Journal Asiatique, III. Paris, Imprimerie Nationale, MDCCCXC.

† Sitzungsberichte der Königlich Preussischen Akademie der Wissenschaften zu Berlin; XXVII, 1890; Sitzung der-philosophisch-historischen Classe vom 17 Juli.

‡ In the references to Professor Weber the upper number indicates the page of the reprint, the lower that of the *Sitzungsberichte*.

the fifteenth century A. D., or possibly even later. According to a friendly communication of Mommsen's, the borrowing of the word *δηνάριον* itself (always neuter) from the Latin *denarius* dates at the earliest from the time of Cæsar and Augustus, who first introduced a gold coinage current throughout the empire, which was therefore designated by a Latin word, commonly *aureus*, though the term *denarius aureus* is also used.

The transference of the word *dínāra* to India, and the introduction of it into Indian literature can hardly have taken place so soon, and we may well assume another century approximately as necessary for such introduction. From this the inference follows that no Indian work in which the word *dínāra* occurs can be older than the second century of our era."

The Gupta inscriptions show that the use of the word *dínāra* for certain gold coins was well established by A. D. 400, and suggest that the *dínāra* was distinct from the *suvarṇa*.* I have elsewhere stated my belief, which I am still inclined to hold, that the term *dínāra* in Gupta times was restricted to the coins which followed the weight standard of the Roman *aureus denarius*, based on the Attic stater of 134·4 grains, and that the term *suvarṇa* designated the heavier gold coins struck to the native standard of 80 *ratis*, or 146 grains.†

* Sānchi inscription of Chandra Gupta II, dated 93 = A. D. 412-13 ;

Gaḍhwā ditto ditto , dated 88 = A. D. 407-08 ;

Ditto ditto Kumāra Gupta, (No. 8), date lost,

Ditto ditto ditto (No. 9), dated 98 = A. D. 417-18.

Sānchi ditto ditto, or Skandh Gupta, dated 131 = A. D. 450-51.

Gaḍhwā ditto ditto (No. 64), date lost.

"Lines 7 to 12 (*scil.* of this last inscription) appear to have recorded certain grants fixed in *dínāras*, for the purpose of providing food in a *sattra* or almshouse, and also to provide pairs of upper and lower garments..... The second part, again, refers to food in an almshouse, recording something in connection with it at a cost of nineteen gold coins of the kind called *suvarṇa*." (*Fleet, Corpus Inscr. Ind Vol. III, pp: 33, 38, 39, 40, 41, 262, 265.*)

† The Coinage of the Early or Imperial Gupta Dynasty of Northern India (*J. Roy. As. Soc. for 1889, Vol. XXI, N. S., p. 43.*)

The jurist Brihaspati is, however, against this supposition. He says:—

14. A Nishka is four *suvarṇas*. A *Paṇa* of copper is a *Kārshika* (having the weight of one *Karsha*.) A coin made of a *Karsha* of copper has to be known as a *Kārshika Paṇa*.

15. It is also called *Ṃdikā*. Four such are a *Dhānaka*. Twelve of the latter are a *Suvarṇa*. This is also called a *Dínāra* (*denarius*)." (*Brihaspati, X, 14, 15 in 'Minor Law Books, Nārada and Brihaspati,' translated by Jolly being Vol. XXXIII of the Sacred Books of the East, page 317.*) I do not doubt the accuracy of Brihaspati's statement, but it can perhaps be interpreted to mean that both a *suvarṇa* and a

It is interesting to observe that etymologically the word *δραχμή* ("from *δράσσομαι*, and so, strictly, as much as one can hold in the hand," L. and S.) is the equivalent in meaning of the Indian *para*, पण, (akin to *pāṇi*, पाणि, 'hand'), which originally meant 'a handful of cowries.' (Cunningham, *Archæol. Reports. Vol. X, p. 78*).

I may also be permitted to call attention to the fact that the limiting anterior date determined as above for the transfer of the Latin word *denarius* to India is the date which I have independently fixed as that from which strong Græco-Roman influence on Indian art can be traced.

Leaving for the present Professor Weber, I shall now turn to the essay of Mr. Senart, which is principally concerned with the stone remains of the Kábul River valley, or Gándhára, the chief subject of my former disquisition.

Mr. Senart's paper is divided into two parts, the first of which deals with inscriptions in the Arian (Gándharian, Kharoshtrí) character, and the second with sculptures recently obtained by Captain Deane from excavations at a place called Sikrí, near the well-known site of Jamál-garhí.

The observations of the distinguished French scholar mark a great advance in the interpretation of the Arian inscriptions, though much still remains obscure. He gives facsimiles in photo-type from paper casts of three inscriptions, all in the Lahore Museum, viz., (1) that from Takht-i-Bahí, (2) a short one from a locality not known, and (3) the Zeda record, and offers readings and interpretations, more or less complete, of all three, besides remarks on several other connected documents.

It is satisfactory to learn that there is no doubt that the Takht-i-Bahí inscription is really dated in the year 26 of king Guduphara (Gondophares), and in the year 103 of an era the initial point of which is still undetermined.

dándra had the same subdivisions, and, in any case, whatever may have been the usage elsewhere, the writer of the inscription at Gaḍhwá must surely have considered the *suvarṇa* and *dándra* to be different, or he would not have distinguished them. Nárada (*ibid.* page 231) writes to the same effect as Brihaspati.

Nárada probably wrote in the fifth or sixth century A. D., (*ibid* page XVIII); and Brihaspati in the sixth or seventh century A. D. While these pages have been passing through the press, a valuable little work by Sir A. Cunningham, entitled 'Coins of Ancient India' (Quaritch, 1891), has appeared. The earliest Indian coins and metric systems are there discussed. I have above, as in my previous publications, reckoned the weight of the *ratí* to be 1·825 grain, and that of the *paṇa*, *karsha*, and *Suvarṇa* as 146 grains. Sir A. Cunningham now uses 1·8 and 144 respectively, as the elements of his calculations. He used to follow Thomas in his erroneous estimate of the weight of the *ratí* as 1·75 grain. The figures 1·8 and 144 are very convenient.

In connection with this inscription, which records the presentation of a votive offering, Mr. Senart discusses the varieties and development of Buddhist votive formulas. He is inclined to think that the later and fuller forms were imitated from Græco-Roman formularies. This particular manifestation of western influence on India has not, I think, been previously noted, and I therefore quote in full the passage in which the theory is broached.

“En somme, c'est au Nord-Ouest que commencent les formules votives développées, elles affectent un caractère qui ne s'explique pas bien par le jeu naturel des idées natives.

Est-il nécessaire d'admettre que l'imitation des formules épigraphiques de l'Occident ait contribué à les faire adopter ?*

A cet égard, une double particularité me frappe dans nos deux dédicaces indo-bactriennes. L'une et l'autre affichent en bonne place un souci particulier de la ‘santé,’ de la ‘prosperité’ du roi et de sa famille. Le trait est si peu indou qu'il ne se retrouve, que je sache, nulle part dans l'Inde intérieure ; il est si bien entré ici dans les mœurs qu'il se perpétue jusqu'à une époque assez basse : l'inscription de Kurra, datée du règne de Toramâna, au V^e siècle, le reproduit encore.

Comment ne pas songer aux vœux si fréquents dans les épigraphes gréco-romaines ‘pour le salut des empereurs’ ? Le mot *agrabhaga*, que j'ai traduit par ‘prosperité,’ et qui ne peut guère, d'après le contexte, s'éloigner de ce sens, constitue une locution spéciale dont l'usage n'est pas consacré par la littérature. Ne semble-t-il pas révéler la recherche d'un terme approprié pour cette idée de ‘fortune,’ qui sort quelque peu de l'ordre des notions familières à l'esprit Indien ? et ne représenterait-il pas un essai de traduction directe ou indirecte de l'*ἀγαθὴ τύχη* du grec ?

On me pardonnera d'avoir, en passant, signalé cette impression. Je sens de combien de réserves il convient d'entourer de pareilles conjectures.”

The conjecture seems to me highly probable. It may be remembered that several years ago I traced in the devices of the Gupta coinage reminiscences of the Greek *ἀγαθὴ τύχη* and her representative the Roman *Fortuna*.

While on the subject of Roman influence on the form of Indian inscriptions, I may note another conjecture which has occurred to me, namely, that the well known Indian practice of inscribing a record on several plates of copper joined by a ring may very likely have been

* Il est superflu de rappeler ici les expressions très-variées de ces vœux de santé, de bonheur, qui accompagnent tant de dédicaces grecques et latines. On en trouvera des énumérations plus ou moins complètes dans les traités d'épigraphie.

borrowed from the Romans. "Inscriptions on bronze tablets sometimes occur. These are *tabulae honestae missionis*, diplomas, or good conduct discharges. They are copies of decrees, promulgated at Rome, conferring upon the soldiery, as a reward for distinguished service, the privilege of Roman citizenship and the right of marriage. They seem to have been usually inscribed on two sheets of metal, which, being united by thongs, folded together like a book. Examples of these tablets have been found from the year A. D. 34 of the Emperor Claudius to the year of the Emperor Maximian, A. D. 300. They were invariably suspended on the walls of the temple in the Capitol for public exhibition."*

Mr. Senart devotes several pages to the consideration of the dated Hashtnagar inscription first published by me in the *Indian Antiquary* for 1889, and to a discussion of the era used in it and other inscriptions from the same region. The subsequent publication in this *Journal* of a photograph of the inscribed pedestal from Hashtnagar will, I think, remove the doubts which Mr. Senart felt as to the presence of the symbol for 100. He was inclined to read the date, as shown in the rougher facsimile of the *Indian Antiquary*, as being 84 only, but it is certain that the date is either 274, as formerly read by Sir A. Cunningham, or 284. The character preceding the 4 is certainly almost identical with each of the three characters for 20 which precede it, and so may be read also as 20, but it is not absolutely identical, being slightly straighter and narrower in shape, and this minute difference may be held sufficient to warrant us in reading it as the symbol for 10. So far as the historian is concerned it makes little matter whether the date is 274 or 284, but I think it more probable that 274 is the correct interpretation.

I altogether disagree with the opinion of Mr. Senart that "nous sommes forcés d'admettre que l'alphabet du Nord-Ouest, dans lequel est gravée l'inscription, était, au milieu du IV^e siècle, dès longtemps hors d'usage." But on this question I have nothing to add to what I have already printed, nor have I anything to retract.

Mr. Senart makes an important correction in the reading of the inscription by substituting *praushthapada* for *emborasma* as the name of the month.†

* Westropp, *Handbook of Archaeology*, p. 500, 2nd edition, Bohn's Illustrated Library, 1878.

† In 'Coins of Ancient India' (Quaritch, 1891) Sir A. Cunningham incidentally (page 37) accepts Mr. Senart's reading of the date as 84. But the figures for the centuries are certainly in the record. Dr. Bühler reads "Sup II C XX XX XX X IV Postavadasa masasa di[ya] sammi pam[cha]mi 5 [11*]", and translates "The year 274, on the fifth, 5, day of the month of Praushthapada (i. e., Bhādrapada or August-September)." He observes that in the name of the month the reading

I should have mentioned that there are a few scratches or imperfect characters on the stone below the inscription, but these do not seem ever to have had any meaning.

I was inclined to refer the date 284 or 274 to the Saka era of A. D. 78 rather than to that of Gondophares and Moga (Manas), chiefly on account of the inferiority of the style of the figures on the pedestal as compared with that of the best Romano-Buddhist sculpture.

But, when discussing the remarkable statuette of the Emaciated Buddha of which he gives a plate, Mr. Senart points out (*note*, p. 43) that the execution of the principal figure is far superior to that of the minor figures of the relief on the pedestal. "A cet égard, on remarquera l'écart qui s'accuse entre la figure principale et le bas-relief qui décore le socle, et qui est traité assai sommairement, sans doute comme une scène conventionnelle multipliée en nombreuses répliques par des artistes inférieurs. Il y'a là un avertissement qui ne doit pas être perdu pour ceux qui s'attacheront à établir la série chronologique des ouvrages gréco-buddhiques."

The observation is perfectly correct, and I readily accept the warning. I am quite willing to admit now that the era of either Gondophares or Moga is most likely that in which the Hashtnagar pedestal is dated, and that its approximate date is therefore about A. D. 220 or 230. Very probably the principal statue, which Mr. King was unable to appropriate, was executed in a style much superior to that of the pedestal. On this supposition the work is contemporary with the Jamálgarhi sculptures, and my arguments concerning the date of those remains are strongly confirmed. My approximate date for the best sculptures at Jamálgarhi is A. D. 250.

It is still uncertain whether the eras used by Gondophares and Moga are identical or different. Mr. Senart (p. 19) shows that the mode of expressing the date in the Taxila inscription, namely, "in the year 78 of the great King Mogas," does not imply that the era used was founded by that sovereign. "Rien n'est moins vraisemblable. Il suffit de se reporter aux épigraphes de Mathurâ (par exemple nos 1, 4, 6, comparés à 2, 4, 7) pour se convaincre que le nom du roi ajouté, au génitif, à l'indication de l'année n'implique ni que la date donnée se réfère à une ère fondée par lui, ni qu'elle ait pour point de départ le commencement de son règne. Comme, d'autre part, quand un nom de roi est indiqué, il marque régulièrement le souverain regnant, il faut

pothavadasa is linguistically possible. (*Indian Antiquary for Nov. 1891, Vol. XX, page 394*). Sir A. Cunningham now calls the Arian alphabet by the name Gandhari-an, which is, I think, the best of the many names more or less current.

certainement entendre notre date; 'l' an 78, sous le règne du grand roi Mogas.' L' imitation des formules grecques par le génitif absolu *βασιλέωντος* ou *τυραννοῦντος*, etc., explique suffisamment, par l' influence naturelle du monnayage, ce que la locution pourrait au premier aspect avoir de surprenant."

The last observation calls attention to yet another case in which Indian practice has been affected by Greek example.

Following Sir A. Cunningham, I described (*page* 142) in my former paper a brief record at Jamálgarhi as "seven unintelligible letters, read as *Saphaë danamukha*, incised on the back of the nimbus of one of the statues supposed to be those of kings." Mr. Senart (*page* 24) shows that the correct reading is *saphala danamukha*, "c' est á dire 'don méritoire.'" This word *danamukha* is unknown in literature, but occurs in the inscriptions on the Bhimaran vase and the Manikyála cylinder. Mr. Senart is unable at present to decide whether or not the word *dánamukha* implies a shade of meaning slightly different from that of the simple *dánam*, and contents himself with noting (*page* 26) that in the inscriptions where the longer expression occurs it is not accompanied by the name of the gift in apposition, like *dánam thambo*, *thápo dánam*, etc.

Pages 27-31 of his paper are devoted by Mr. Senart to the discussion of the Zeda inscription. He is unable to give a complete translation of this record, but it is satisfactory to find that it is certainly dated in the year 11, in the reign of Kanishka, as deciphered by Sir A. Cunningham.

The short record, which is pumbered II by Mr. Senart, is also a votive inscription, and, subject to certain reservations, is thus translated (*page* 27); "An 68, le seizième (16) jour du mois Praushthapada. Don de...vadhitrana et de ses compagnons."

It is not known to what object it was attached, but doubtless it was a sculpture of some sort. The era is, of course, also undetermined. If it is that of Kanishka, the date would be $78 + 68 =$ A. D. 146. If it is that of either of Moga or Gondophares the date would be about A. D. 20. Either date is quite possible, but, if the earlier one is correct, we may be quite certain that the sculpture showed no trace of Roman influence, though it may have been Hellenistic in style.

The two statuettes from Sikrî of which M. Senart gives excellent phototype plates are both well executed, and seem to belong to the best period of the Gándhára school.

The first represents the Buddha seated, reduced to a state of extreme emaciation by the austerities which he practised in the first stage of his religious life. Mr. Senart cannot remember having seen any other ancient representation of the Buddha in this condition, but notes (*page*

33) that the Musée Guimet contains three modern figures of the emaciated Buddha. One of these is a fine Chinese bronze attributed to the last century. The others come from Japan, one being in wood, and the second in bronze, and are supposed to date respectively from the sixteenth and seventeenth centuries. All three represent the Buddha in a standing posture.

The second statuette figured is that of a woman standing, carrying on each shoulder a small standing figure, and suckling an infant, which sits astride, Indian fashion, on her right hip. The interpretation of this group is as yet unknown. Mr. Senart conjectures that the small figures on the shoulders may be intended to mark the divine rank of the principal figure, and that they are offering her a diadem or garland. Probably the woman is Mâyâ, the mother of the Buddha. The comparison with images of the Madonna Lactans is obvious, and is of interest when considered in connection with the numerous cases of resemblance between Buddhist and Christian works which I have cited.

The last twenty-one pages of Mr. Senart's essay are devoted to a discussion of the date of the Gándhâra sculptures. His view is substantially the same as that advocated by Sir A. Cunningham (*page 149 of my former paper*). The following passages express Mr. Senart's general conclusions:—

“Il est fort possible que la tradition de l'architecture et de la sculpture gréco-buddhiques se soit au Nord-Ouest continuée pendant une période plus ou moins longue. Un point cependant doit être considéré comme établi, c'est que la période de floraison et de grande expansion de cet art est antérieure à la seconde moitié du II^e siècle; que, dès cette époque, l'évolution dont il a été l'initiateur dans l'iconographie buddhique était achevée, consacrée. Il serait dès lors bien arbitraire en dehors de preuves positives qui n'ont point été produites, de ramener à une époque plus basse les monuments principaux qui nous en sont parvenus, ceux surtout qui paraissent les plus caractéristiques et dont l'aspect est relativement ancien,” (*page 42*).

The date of the statuette of the Emaciated Buddha is decided to be “not later than the end of the first century A. D.” (*page 44*).

“Pour la date, la première moitié du II^e siècle paraît marquer le moment où l'imitation a été la plus active, et il n'y a aucune probabilité qu'elle se soit prolongée très-longtemps au delà. Si elle s'était exercée à une époque plus tardive, postérieure à la grande floraison du buddhisme sous Kanishka et Huvishka, il est à penser qu'elle ne serait pas si exactement circonstrite dans l'art Buddhique” (*page 52*).

When the passages quoted were written Mr. Senart had not seen my paper on the subject, and I shall therefore abstain from discussing

his views at length, and content myself with the observation that in my opinion he has been misled by his failure to perceive the Roman characteristics of the greater part of the Gándhára sculptures. He refers, certainly, to Fergusson's brief remarks on this topic, but dismisses them as being of little weight. To my mind, on the other hand, the strong Roman influence on the Gándhára school seems to be an obvious, palpable fact that cannot be ignored.*

Mr. Senart seeks in Parthia, not in Rome, for the special variety of Hellenistic art which supplied the model to the Gándhára sculptures.

"Au commencement du I^{er} Siècle avant J. C., le retour offensif d' influences occidentales représentées par le philhellenisme des Arsacides, et maintenues par la création de la dynastie parthe particulière à cette région expliquerait l' établissement d' une sorte d' école pénétrée des traditions classiques; à la fin du I^{er} siècle après J. C., l' établissement de la puissante dynastie de Kanishka, tributaire au point de vue de la civilisation de ses voisins de l' Iran, marque le moment où, sur la base la plus large qu' eût jamais conquise dans l' Inde une race étrangère, cette école gréco-parthe a pu le mieux propager son influence dans l' intérieur du pays" (page 48).

I cannot discover in the Gándhára sculptures any distinct trace of Parthian influence, though the Persepolitan form of capital which is seen in some of the earlier works is, of course, a proof that the artists of the Gándhára school were naturally not ignorant of the art of Persia.

PART II.

Professor Weber opens his interesting essay by the intimation that it is designed to give a cursory view of what is known, partly from certain data, and partly from more or less plausible conjectures, concerning the position and influence of the Greeks in India.

The Greeks are called by Indian authors 'Yavana,' that is to say Ionians. This word seems to have been introduced through Persia, and has been successively applied to the Greeks, Indo-Scythians, Parthians, Persians, Arabs (or Muhammadans), and, finally, to Europeans.

[The use of the word is in fact analogous to the modern use of 'wiláyat,' which includes Europe as well as Afghánistán, and other countries on the North-West frontier. V. A. S.]

The oldest mention of the term 'yavana' is found in the grammar of Páṇini (4, 1,49), who is now generally supposed to have flourished

* Mr. Ed. Drouin informs me that both he and Mr. Silvain Levi agree with me in the opinion that "the Roman element had a real influence on the sculptures of the northern schools."

about the beginning of the third century B. C. He teaches the formation of the word 'yavanáni' to indicate the writing (*lipi*) of the Yavana.

[The jurist Gautama (IV. 21; page 196 of Bühler's translation) enumerates Párasavas, Yavanas, Karaṇas, and Súdras together. His date is probably as early as that of Pāṇini. V. A. S.]

The well known passage in the thirteenth edict of Aśoka which mentions the Yona (Yavana) kings, Antiochus, etc., is, of course, the earliest historical reference to the Yavanas, the date of which is certain.

Some scholars have discovered the name of Alexander in the Kálsi version of the edicts, but the reading is doubtful.

A distinct trace of the name of the great conqueror is found in the appellation of the city Alasaddá, or Alasanda, mentioned in the Mahāvansa and the Questions of Milinda. This name is obviously identical with Alexandria. Some have supposed the city to be situated on the Indian Caucasus, or Hindu Kush. [But it would seem rather to have been situated on an island in the Indus, if we may trust the author of the Questions of Milinda.

"The Elder replied: 'In what district, O king, were you born?'"

'There is an island called Alasanda. It was there I was born.'

'And how far is Alasanda from here?'

'About two hundred leagues.....'

'In what town, O king, were you born?'

'There is a village called Kalasi. It was there I was born.'

'And how far is Kalasi from here?'

'About two hundred leagues.'

'How far is Kashmír from here?'

'Twelve leagues?'

Professor Rhys Davids is inclined to think that the town of Kalasi is identical with the 'Karisi nagara,' which seems to be mentioned on a coin of Eukratides (*acc. circa* B. C. 190) and that the coin was struck in commemoration of the fact of the Greeks having reached the Indus.* If the coin is rightly read, this conjecture seems extremely probable, but, unfortunately, the legend quoted is only "the conjectured reading of General Cunningham." (*Gardner, Coins of Greek and Scythic Kings*, page 19, note, and Plate VI, 8).

Professor Weber next proceeds to argue in favour of a highly conjectural theory connecting the name Skanda with Alexander, but I think my readers will excuse me from reproducing his very unsatisfactory arguments. V. A. S.]

* "The Questions of King Milinda," translated from the Páli by T. W. Rhys Davids, being Vol. XXXV of Sacred Books of the East, pp. XXIII and 126.

Ápisali, one of the teachers cited by Pāṇini, speaks of the formation of the compound 'Kshaudraka—Málava' (*scil.* 'sená), 'the army of the Kshaudrakas and Málavas,' the 'Οἰϋδράκοι and Μάλλοι of the Greek historians. Inasmuch as we are told by them that these two peoples were at bitter enmity with one another, and only combined from fear of Alexander, it is possible that the grammarian may have had in his mind the invasion of Alexander. If this supposition is correct, both Ápisali and his disciple Pāṇini must belong to a period later than that of Alexander.

The Sauvira city Dattámitrí seems to be Demetrias; and the Sauvira names Phántáhrítí, Mimatá, and Jamunda mentioned by Pāṇini (4, 1, 148, 150) and his scholiast, suggest the Greek names Pantarchos, Mimas, and Diomedes.

The Greek name Ptolemaios or Ptolemy appears in Ásoka's edict under the easily recognized form Turamaya, but it seems also to have been adopted by Hindu literature and mythology under the form Asura Maya, and with a double signification. In the second book of the Mahábhárata Asura Maya, the architect of the Asuras, appears as the friend of king Yudhishtíra, and builds for him a palace, the marvels of which excite general wonder and astonishment. This Asura Maya seems to me to be an appropriation by means of a popular etymology of the name Turamaya, and his skill as an architect appears to refer to the buildings of the Ptolemies, or even to the wonderful buildings of ancient Egypt. Another circumstance lends support to this supposition. A second application of the name Asura Maya is that which occurs in the extant, though certainly secondary, text of the Súrya-Siddhánta (1, 2), where he appears as the father of Indian astronomy. In this case, of course, there is no reference to king Ptolemy, but the person meant is the astronomer of the same name who flourished in the first half of the second century of our era.

It is to be observed that on both occasions the name entered India through the medium of the same mythical personality.

In the Jnánabháskara, the astronomer Asura Maya is placed in connexion with Romakapura, which must mean either Alexandria or Byzantium, or, more generally, the lands of the barbarians (*mlechchha*). The eighth book of the Kathásaritságara tells of the conquest of the gods under the command of Indra by the Asuras under the leadership of Maya. The terms Dánava and Asura must often be understood to mean foreign peoples.

[It may be remembered that I have suggested (*page 133 of my former essay*) that the whole conception of the Asuras and their conflicts with the gods was borrowed from the Greek legends of the Gigantomachia. The myths above referred to seem to give support to my conjecture. V. A. S.]

Other Greek names also may be recognized in the Hindu epics.

Tod long ago identified the Yavana king Dattāmītra, who is described in the Mahābhārata as taking a direct part in the struggle, with the Bactrian king Demetrius (*flor. circa* 180–165 B. C.), and this identification was accepted by Lassen. The city Demetrias built by him appears in the Rāmāyaṇa under the further corrupted form Daṇḍāmītrā, and in a votive formula of Buddhist tendency as Dāttāmītiyaka Yoṇaka. The name of Bhagadatta, the king of the Yavanas who ruled over Māru, or Mārvar, and Naraka in the West and is specially mentioned (*M. Bhār.* 2, 578, 579) as an old friend of the father of Yudhishtira, has been regarded by A. v. Gutschmid as a translation of the name of the Bactrian king Apollodotus (*flor. circa* B. C. 160), and this supposition appears to me a happy one.

The name of the Kāśmīr prince Jalauka, mentioned in the Mahābhārata, may be identified, though not without reserve, as a corruption of Seleucus.

Finally, the name of Menander is certainly represented by that of Milinda, king of Sāgala (Σαγγαλα), who plays an important part in the tradition of southern Buddhism, and was remembered even down to Puranic times. The 'Milindapaṇḥa' will be referred to again on a later page.

The allusions to the Yavanas in Pāṇini and the Mahābhāṣya should be here considered. The teaching of Pāṇini concerning the formation of the word 'Yavanāni' to signify the writing (*lipi*) of the Yavanas has already been referred to. But it seems as if a direct use of the Yavana characters by Pāṇini may be detected.

According to Goldstücker (*Pāṇini*, page 53) he uses the second letter of the Indian alphabet as a sign for the numeral two, and Burnell (*Elements S. I. Palæogr.*, page 96, and *Aindra Grammarians*, page 77) supposes that he was in this passage influenced by the similar use of the letters of the Greek alphabet as numerals.

The characteristic remark in the Calcutta scholium on the passage in 3, 2, 120 *śayānā bhuñjate Yavanāḥ*, 'the Yavanas eat reclining,' is of interest. This remark is not found in the Mahābhāṣya (see *Ind. Stud.* 13, 381), and it clearly rests on an older observation, or rather, tradition.

Two examples given in the Mahābhāṣya on Pāṇini 3, 2, 111, are of the highest interest, namely, *Yavano 'rupan Mādhyamikān*, 'the Yavana prince oppressed the Mādhyamikas'; and *Yavano 'rupat Sāketam*, 'the Yavana prince oppressed Sāketa.' These examples are given as illustrations of the use of the imperfect tense to signify an event which happened a short time previously, and therefore show that the oppression

of the Mádhyamika people and of the city of Sáketa must have occurred shortly before the composition of the examples. Unfortunately the geographical position neither of the people or city is ascertained with precision, but Sáketa, the Greek Σαγδα is probably the modern Ajodhya or Oudh. [Fergusson, however, thought that its site should more probably be sought at Lucknow. It certainly was situated in the province of Oudh. Dr. Führer (*Monumental Antiquities and Inscriptions, N.-W. P. and Oudh*, p. 275) is satisfied that Sanchánkoṭ, or Sujánkoṭ in the Unáo District, on the Sái river, 34 miles north-west of Unáo, represents the ancient Sáketa, the Sha-chi of Fa-Hian. According to him Ajodhya is the Visákhá of Hiuen-Tsiang, but not the Sha-chi of Fa Hian. V. A. S.] The passage in the Mahábháshya indicates an extension of Greek dominion in the interior of India, which could not be suspected from perusal of the Greek writers. The reality of this extension is further supported by the chapter of the Garga-Samhitá named Yuga-purána, which mentions, not only the occupation of Sáketa by the Yavanas, but their further advance to Kusumadhvaia or Pushpapura, that is to say Pátaliputra (Παλιβοθρα). But it is possible that we should rather suppose the text to refer to the advance of the Indo-Scythians, to whom the name of Yavanas was transferred.

The Garga family, which, notably enough (with the exception of a single passage in the Káthaka), is mentioned first in the latest sections of the Bráhmaṇas and Sútras, but comes specially to the front in the Mahábháshya (see *Ind. Stud.* 13, 410, *seqq.*), is repeatedly placed by legend in close connection with the Yavanas. Specially, a verse, which honours the Yavanas as teachers of astronomy, is ascribed to Garga.

In order to dispose of all the legendary-historical information concerning the Yavana princes of ancient times which can be extracted from the Mahábhárate, etc., it must here be noted that the Kála-Yavana or 'Black Yavana' is brought into special relation with Krishna and Garga. The name Black Yavana appears intended to distinguish the bearer of it from other kinds of Yavanas.

We must further observe that the Yavana king Kaserumant is shown as occupying a hostile, or more exactly, a subordinate position. I have already expressed an opinion (*Ind. Skizzen*, pp. 88, 91; and *Akad. Vorl. in. L. G.* 205) that the name of this Kaserumant is a reminiscence of the Roman Cæsar, and Mr. Léon Feer has since shown (*Comptes Rendus de l'Acad. des Inscr.*, 1871, pp. 47, 56, 60), that the expression *Kesare náma samgrámaḥ*, 'Cæsarean or Roman order of battle,' occurs in the Buddhist Avadána-śataka. If these passages belong to the period of the great deposits of Roman coins in India they supply a certain legendary back ground for them.

Finally, we must note the prominent position which the Yavanas, in common with the Kambhojas, Śakas, Pahlavas, Balhikas, etc., take in the Mahābhārata, as well as in the Rāmāyaṇa, and which is so significant for the determination of the period of composition of these works. The Romakas are also mentioned there, though but rarely.

The city Romakapura, which plays a special part in astronomical literature (*see above*) should not be understood to mean Rome itself, but Alexandria, or perhaps, Byzantium.

The city Rauma mentioned in the Viṣṇu-purāṇa (*Wilson-Hall*, 1, 130) must be understood in the same way. A Romaka-siddhānta appears to have been one of the earlier works used by the astronomer Varāha Mihira, who lived between A. D. 504 and 587.

The well-known part which Yavana women play in the dramas of Kālidāsa (who is supposed to have flourished in the middle of the sixth century A. D.) as personal attendants of the king may be in some degree explained by the trade in "good-looking girls for concubinage," which, according to the author of the *Periplus*, was carried on between Alexandria and India. Samudra Gupta's Allahabad Pillar inscription [*Fleet, Corpus Inscr. III*, p. 14, *V. A. S.*] mentions the delivery of maidens as tribute by the Sassanian king of Persia, who is there called the Shāhānushāhi. The superior culture and education of these foreign girls may be the explanation of the introduction of certain peculiarities in the attributes of the Indian god of love, Kāmadeva. The chief of these is the dolphin (*makara*) banner which he carries, like the Greek Eros. He is also sometimes described as the son of the goddess of beauty, who, like Aphrodite, rises foam-born from the waters. But this latter myth may be of primitive Indo-Germanic origin, and refer to the dawn. Sometimes he is represented as the consort of the goddess of desire. The ancient image of Aphrodite, accompanied by Eros and the dolphin may be dimly made out in a relief on the temple of Bhuvanēśvara in Orissa, which seems to date from the seventh century of our era; but the form is very degraded in execution.

It is very difficult to understand how the Kinnara, or monkeys in the guise of men and women, can have been turned into 'heavenly choristers,' for even Indian taste can hardly regard the screeching of monkeys as melodious. Perhaps the *kuṛūpa* used by the Greek maidens at the courts of the Indian princes may be at the bottom of the conception.

[*Kuṛūpa* was a ten-stringed instrument, and *kuṛūpós* and cognate words mean 'wailing.' The conjecture seems to me a very far-fetched one. *V. A. S.*]

Another bold conjecture would explain the amended reading 'Kharān' in the Pāṇiniyā Śikshā, when it is explained to mean the form of

greeting used by the women of Surāshṭra, to be the Greek χαίρειν. This conjecture is supported by the facts that Greek influence lasted late in Surāshṭra, and that in Byzantine inscriptions χαίρειν, written as χεριν, is used as a salutation formula instead of the imperative χαιρε.

With reference to the political position of the Greeks in India the direct transfer into Sanskrit and Pāli of the words σπιργίξ and χαλινός in the forms *suruñgá* (underground passage; mine), and *khalína* (= bridle, rein, especially the bit of a horse's bridle) is of interest.

Merely for the sake of completeness some words may be noticed which occur only in dictionaries. Examples of these are *yavanapriya*, 'pepper,' *yavaneshta*, 'tin,' *yavana*, 'incense.' But in these cases the term Yavana may refer, not to the Greeks, but to other foreign nations who succeeded them.

Many articles of commerce have Indian names identical with the European, e. g., *kastira*, κασίτερος; *kastúri*, καστῶρειον; *marakata*, σμάραγδος; *śringavera*, zingiber; and others.

But in these cases it is uncertain whether India was the borrower or the lender, and in a large number of instances there is no doubt as to the Indian origin. Examples are:—*ὑπαλος*, *upala*; *βήρυλλος*, *veluriya* (*vaidúrya*, *vaidurya*); *καρύφυλλον*, *kaṭukaphala*; *κιννάβαρι*, *khinnavári*, etc.

[The Professor then devotes a few words to the Græco-Buddhist sculptures and the origin of coinage in India, but his general observations are only of a cursory nature, and need not be translated. I have already translated his note on the words *dramma* and *díndra*. He refers to the essay of Stephani, (*Nimbus und Strahlenkranz*; in the *Mémoires de l'Académie de St. Petersbourg*, 6 ser. t. IX) as establishing the probability that the rise of the nimbus in art, which Spence Hardy regarded as of eastern origin, is more probably an importation from the West. On this question Mr. Senart has no doubt at all, and boldly says (page 38) that the classical origin of the nimbus is certain. It is quite possible that a close examination of the Buddhist sculptures of the Gāndhāra school with reference to the use of the nimbus may help to settle their date. V. A. S.]

According to Halévy, who has recently republished his views, the Indian alphabet itself, as it is first met with in the time of Piyadasi (Aśoka), is derived from the Greek. But this theory appears to deserve little credit, and it is much more probable that the importation of the Semitic writing into both India and Greece occurred at the one period, and that the great resemblance between several of the most important characters is thus to be explained. In any case, the further inference impugning the antiquity of Indian literature, which Halévy draws from his theory, completely fails, because the oral transmission of ancient texts undoubtedly reaches back to very early times.

The fact is of interest that the Greek names of the colour 'black' μέλαν, and of the reed-pen, κάλαμος, both found admission into Sanskrit under the forms respectively of *melá* and *kalama*. *Melá* occurs in the romance of the *Vásavadattá* which seems to be related to a Milesian tale (see *post*). The observation as to *kalama* applies only to the word when used in the sense of 'pen,' and not to the form of the word itself, (see *Hála* (1881) *Vorw.*, p. XVII, *Monatsbericht*, 1871, p. 623).

It appears almost certain further that the Sanskrit word *pustaka*, 'book,' should be regarded as an inversion of a possible Greek form πυξικον.

[It is certain that *pustaka* was introduced into Sanskrit at a comparatively late date. It occurs in the *Pañchatantra*. The form πυξικον is not known to occur, but πυξιον is used in Aristophanes, *Frag.* 671, in the sense of a tablet for writing on. Liddell and Scott quote the same passage as a reference for the form πυξιδιον, which seems to be a various reading. *V. A. S.*]

We thus arrive at the most important matter in which Greek influence on India is demonstrable, namely Poetry, Science, etc. We have already seen that in the epics the Greek princes are brought into direct relations with the actors in the narrative. Great analogies and coincidences certainly exist between the *Mahábhárata*, and, still more, between the *Rámáyana* and the *Iliad* and *Odyssey*. The rhetorician Dio Chrysostom (who lived in the time of Trajan A. D. 98-117) refers to these peculiarities of the *Mahábhárata* when he ascribes to the Indians a knowledge of the poems of Homer as transferred to their own language and dialect. This passage was formerly interpreted as indicating merely the existence of the *Mahábhárata* in the time of Dio Chrysostom, but, in the light of facts recently brought to light, the hypothesis that the author of the so-called 'battle-section' of the *Mahábhárata* actually made use of the Homeric legend, cannot well be absolutely rejected.

The *Ráma* legend in its Buddhist dress differs greatly from that presented by *Válmiki*, and there seems to be no doubt that the Buddhist version is of higher antiquity. It is thus quite possible that *Válmiki* may have used the Homeric legend for his arrangement of the story (see *Weber. Abhandlung "über das Rámáyana"* 1870.)

The patriotism of the Hindus is grievously wounded by this theory, but no one wishes to argue that the *Rámáyana* is copied from Homer. There is, however, no reason to reject as *a priori* impossible the theory that it has been influenced by Homer. It daily becomes more clear that elements of Homeric myth, *e. g.* *Leukothea* and the Trojan horse, have entered into Buddhist historical legends. But, when the mutual exchange of legendary epic materials is considered, it is rarely possible

in such discussions to obtain a result of objective certainty. Conviction may be attained, demonstration is impossible.

So far as coincidences of this sort are not to be ascribed to a purely spontaneous, natural origin and development in both places, two further possibilities must be kept in view. The first is that the coincidences in question need not necessarily be ascribed to borrowing from either side, but may be derived from primitive nature myths of early Indo-Germanic times. The second is that, granted borrowing in historical times, the Grecian legend may not have been of Greek origin, but may have first come from the East, and travelled back again to India.

What has been said above of epic myths holds good for the forms and materials of fairy tales and stories of enchantment, for folklore in short. Indian literature, thanks to the activity of the Buddhists, and, in later times, of their rivals the Jains, is specially rich in compositions of this class. Some of these, in their existing shape, date from tolerably recent times, but it is plain that they rest on old traditions and lost works, which were partly composed, not in Sanskrit, but in popular dialects.

The older works of this kind are generally associated with the name of Śātavāhana; the more recent with that of Vikramāditya.

Both of these kings are alike connected by tradition with the conquests of foreign rulers, especially the Śakas, or Indo-Scythians, and are themselves represented with features of foreign origin.

In yet another branch of literature a similar great agreement between Greece and India is apparent, that is to say, in what may be called the Æsopian Fable.

India has for some time past been considered the parent country of fables. With regard to the transfer of collections of Indian fables to the West since the sixth century A. D. the statement holds good, especially for many beast stories, which, so to say, have been pressed into the service of politics, to serve as a mirror for princes. Accordingly, in this department, and for the period named, we must add to the three, or rather four, possibilities to be weighed in estimating the value of coincidences between India and the West, yet a fifth.*

But, as regards older times, we must absolutely give up the notion that India is the parent country of the Æsopian fable. On the contrary, the Greek form of the fable (putting aside the question of its

* The five possibilities referred to seem to be:—(1) Borrowing by India from Greece, (2) Spontaneous, natural, independent development in both countries, (3) Derivation from primitive Indo-Germanic (Aryan) nature myths, (4) Borrowing by Greece from India, and re-importation into India from Greece, (5) Transfer of political apologues from India to Europe in sixth century A. D. and later. [V. A. S.] But see *post*.

possible independent origin) gives, when compared with the Indian, a more distinct impression of simplicity and originality.

The beasts who take special parts in the beast stories either do not belong distinctively to the Indian fauna, or do not exhibit the characteristics which the Hindus attribute to them.

There is reason to suppose that two words borrowed from Greek fables occur in Sanskrit, viz., *lopáka*, 'jackal,' from ἀλώπηξ, (the old Indian form being *lopáśa*); and *kramelaka*, 'camel,' from κάμηλος; both forms being based on a meaning obtained by popular etymology. Lassen is inclined to seek a Semitic origin for *kramelaka*, but the termination *ela* is decisive against this supposition.

[The word is, however, said to occur in all Semitic languages. Prof. Weber's position is hardly intelligible without further explanation. He refers to his Ind. Stud. 3, 336, Monatsber. d. Berl. Akad. 1871, p. 619. V. A. S.]

In this case also the Buddhists have been the chief carriers of Western materials to India, especially in their Játaka stories.

So far we have dealt with essentially popular materials, and with appropriations made, so to speak, by word of mouth.

There is, however, an artistic form of Greek literature, the Greek romance, which appears to have found direct entrance into India.

Peterson, in his preface to his edition of Báṇa's Kádambarí (1883, p. 101) compares the style of the author directly with that of the Alexandrian, Achilles Tatius (A. D. 450).

I have already in my remarks on that work (*D. L. Zeitung*, 1884, p. 120) pointed out that it was very natural that the "good looking girls," the Yavana maidens, at the courts of the Indian kings should have formed a means of communication for Milesian love stories. Material resemblances, moreover, exist between the Vāsavadattá of Subandhu, a predecessor of Báṇa, and a tale of Athenæus (13, 35), (*flor. circa* A. D. 230) and both Indian authors describe the bringing to life of a stone statue by an embrace, so as to recall the story of Pygmalion.

In this connection the fact is of special interest that in one of the tirades in the bombastic style usual in the Vāsavadattá the word 'ink' is expressed by *melá*, i. e., μέλαν. The passage (*Vāsav.* p. 239) is to the following effect:—"Though the heaven became the page, the sea the ink-bottle (*melánanda*), and the writer a Brahman, yet could he not describe in many thousand ages the agonies of love which she has suffered on his account." The same conceit is still popular in modern Greek love songs, and, according to Hall, is found also in the Qurán. (18, 109). It probably goes back to the Milesian literature.

It appears to me proper, before I go further, to insert here a brief review of what is known as to the coincidences between the subjects of Greek and Indian tales.

I shall not undertake in individual cases to decide which of the five points of view is the true one, that is, to decide whether each story (1) developed naturally, (2) or is of Indo-Germanic, or (3) of Western, or (4) of Greek origin, or (5) was conveyed from India to the West. At present such a determination is for the most part impracticable. But I can at least arrange the whole generally in a certain chronological order.

[Prof. Weber then proceeds to give, with references in each case, a long catalogue of myths relating to the sun-bird, Garuda, Cinderella, the wishing-cow, etc., which are all descended from primitive, Indo-Germanic, Vedic times. He classes in the same category the stories of enchanted princes, castles, etc., etc., in which German folk-lore is so rich. Some of these myths may have arisen in India, and the Greeks and Romans knew a good many of these things on their own account. An extensive and rich field of investigation here lies open. I may note that the Indian Antiquary for several years past has published numerous stories of Indian folk-lore, which are not here referred to by Prof. Weber.

He then gives a similar list of myths which have travelled from the West to India, such as the treasure-chamber of Rhampsinitus, the Rape of Ganymede, the Sibylline books, Orpheus and Eurydice, etc., etc. Christian legends will be dealt with further on. He then proceeds to discuss the origin of the Indian drama. He holds that the germ of the Indian drama is to be found in indigenous religious festivals, resembling the German Passion plays, and that this opinion is strongly confirmed by passages in the *Mahābhāshya* (see *Ind. Stud.* 13, 490 *seqq.*). But the beginnings of dramatic art thus indicated are of a simple and grotesque kind, separated by a very wide interval from the finished work of Kālidāsa. The scope for Greek influence [was found in this interval. He then briefly notices with approval the treatises of Brandes and Windisch, which I have discussed in my former essay.

He next takes up the subject of astronomy, his remarks on which I shall translate at greater length. V. A. S.]

So far as the sciences are concerned, astronomy is above all that in which Greek influence is plainly and clearly visible. The Indian astronomers themselves expressly describe the Yavanas as being their teachers. Among the five ancient Siddhāntas which the astronomer Varāhamihira (A. D. 504-87) has specially made use of there are two, the Pulīsa and Romaka Siddhāntas, which prove this by their very

names. The name Pulīśa must be understood as equivalent to Paulus Alexandrinus.

I have already mentioned (*ante*, p. $\frac{10}{106}$) that the extant Sūrya Siddhānta represents Asura Maya of Romakapura as the first founder of astronomy, and that I regard him as being the Greek astronomer Ptolemy. I have also identified Manetho, the author of the Apotelesmata, [not earlier than the 5th century A. D., according to Smith's Classical Dictionary. *V. A. S.*], with Maṇittha, or Māṇidha. Others regard the name of the Yavana teacher (*Yavaneśvara*) Asphuvi[d]-dhvaja (Sphujidhvaja) as a corruption of a Greek name Aphroisios or Speusippus.

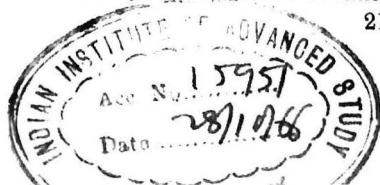
Whilst the oldest Indian astronomy, resting probably on a Babylonian basis, occupies itself with the moon and its mansions (*nakshatra*); the succeeding phase, under Greek influence, concerns itself chiefly with the planets and the sun, that is to say, the zodiac.

The direct consequence of this is the conversion of the Kṛittikā series of the *nakshatras*, hitherto current, and corresponding to a Taurus zodiac, into the Āśvinī series, corresponding to the Aries zodiac. Moreover, not only have the names of the planets and zodiacal signs passed by direct transcription into Sanskrit, and remained to some extent in use till the latest times (*eg. āra* = *Ἀρης*, and *heli* = *ἥλιος*), but numerous technical terms also have been incorporated into the language. Some of these have been worked into the poetic vocabulary, for example, *jāmītra* (= *διάμετρον*) occurs in Kālidāsa's *Kumārasambhava*. [The correct form is *διάμετρος*, not *διάμετρον*. *V. A. S.*]

According to H. Jacobi, the allusions to ancient astrological notions, such as occur in Kālidāsa, are chiefly based on the works of Firmicus Maternus (A. D. 336-354). [The work of Firmicus Maternus is known under the title, 'Matheseos Libri VIII,' and is described as being a formal introduction to judicial astrology. *V. A. S.*]

With regard to arithmetic and algebra, in which the Indians are well-known to have accomplished much, Colebrooke (*Misc. Essays*, 2, 401, 446) was inclined to accept the fact of Greek influence, especially that of Diophantus.

On the contrary, Dr. Hoernle, in the preface to his excellent dissertation on an ancient arithmetical text, composed in the Gāthā dialect, and seemingly of Buddhist origin, decides for "the entirely native origin" of Indian arithmetic. The text in question is supposed to date from the third or fourth century A. D., but the extant manuscript does not seem to be older than the eighth or tenth century. [Compare Major Temple's exposition of Burmese arithmetic in *Indian Antiquary*, Vol. XX (1891), p. 53. The Burmese system is said to be much the



same as that used by astrologers in India, and certainly does not seem to show the slightest trace of the influence of western science. V. A. S.]. Woepcke (*Mém. sur la propagation des chiffres Indiennes, Paris, 1863*) supposes that there is an agreement between the so-called *Arenarius* of Archimedes (B. C. 287-212) and the problem concerning the atomic contents of a *yojana* set at the wedding examination of Buddha. If the alleged coincidence be accepted as established, it would be simpler to believe that the Buddhist statement, the age of which is in no way established, rests on borrowing, then to hold with Woepcke that the problem was borrowed from India. It is even possible that both the Greek and Indian forms of it are the results of Babylonian influence.

Quite recently a Sanskrit version of the *Elements* of Euclid has come to light. In its existing form this work does not go back to a period earlier than the beginning of the last century. The information about it is, however, extremely vague. We do not know whether this work rests on an earlier one of ancient date, or whether it is to be referred to the beginning of the preceding, that is to say, the 17th century, as the result of modern European influence, possibly that of the Jesuit fathers at the court of the emperor Akbar (1556-1605).

In any case the discovery is of interest, because the foreign material of the book has been completely melted down into an Indian shape, which fact offers an excellent parallel for similar precedents in older times.

[This melting down into Indian forms is characteristic of almost all the Indian borrowings, and is the reason that the foreign origin of so much of Indian civilization has been so tardily and unwillingly recognized. I have already commented on the fact with reference to architecture, sculpture, coinage, and the drama. (*See my previous essay, p. 189.*) The only exception to the rule seems to be the sculpture of the Gándhāra school, which is obviously western in character. V. A. S.]

Notwithstanding these possible, or even very doubtful, examples of Greek influence, the Hindus have certainly gone their own way in the province of arithmetic, geometry, etc. The oldest, and rather curiously framed, rules upon permutations and combinations are naturally connected with metrical problems, such as 'How many variations based on the quantity of the syllables are possible in a foot of two, three, four, or more syllables'? Here no foreign influence can well be detected.

Similarly the rules in the so-called *S'ulvasūtra* are derived from practical experiments on the methods of modifying the typical bird-shape of the regulation fire-altar built of bricks. These experiments actually led to the discovery and solution of the theorem concerning the relation between the hypotenuse and the sides of a right-angled

triangle ascribed by the Greeks to Pythagoras, and even to attempts at the quadrature of the circle.

In connection with this subject, L. v. Schröder has recently (in 1884) maintained the proposition that this very theorem was borrowed along with other things by Pythagoras from India.

But nothing is known concerning the date of the *Sulvasūtra*, which is itself only an appendix to one of the so-called *Srautasūtras* of the Yajur Veda. Pythagoras is generally assumed to have flourished between B. C. 540-500, and this is rather an early period in which to suggest importation from India.

It is in reality unnecessary in this case to adopt the hypothesis of borrowing at all, for it is quite possible that correct mathematical results may be attained independently in different places. The definite rules of the *Sulvasūtra* were elaborated as the result of practical experience. It should further be observed that the *Sulvasūtra* has remained quite isolated in India, and has, according to all appearance, undergone no further development. We shall come later to the consideration of the supposed studies of Pythagoras in India.

Indian medicine also appears not to have been uninfluenced by Greek. The tendency of early writers was to exaggerate the high antiquity of medical science in India. Haas has gone too far in the other direction in supposing the *Sūsruta* to have been subject not only to Greek but to Muslim influence, though it is possible that some modern works of Indian medicine may have been affected by Muhammadan teaching. Rudolf Roth has shown in an interesting way the relation between the Asclepiad oath and the teaching of the Charaka concerning the duties of the physician. The identity of the doctrine of the three humours is obvious. Should further coincidences of the kind be established, chronology, at any rate, will oppose no obstacle to the derivation of the Indian doctrines from Greek sources.

So far as concerns philosophy, and religious ideas, which in India are hardly separable from it, the statements of the Greek authors leave no doubt that the Indian ascetics, *γυμνοσφισταί*, *ὑλοβίοι* made a deep impression on Alexander and his companions. The voluntary burning of Kalanos at Athens aroused a feeling of profound, but at the same time, compassionate astonishment. Nor is any doubt possible that the doctrines of the Alexandrian Neo-Platonists and Neo-Pythagoreans, especially the doctrines of Philo of Alexandria, and the doctrine of the *λόγος* derived from him as given in St. John's Gospel, bear Indian features, or rather appear to have been impregnated with Indian ideas.

But to go back to still earlier times, and to derive the Pythagorean doctrine of metempsychosis also from India appears to me, on the contrary, to be doubtful.

L. v. Schröder, who has recently advocated this theory, does not, indeed, go so far as one of his predecessors, who wished to explain the name of Pythagoras as equivalent to Buddhaguru, but even he maintains that the Pythagorean doctrine of transmigration of souls is derived from India, that is to say, from Buddhism. In fact only the latter assumption need be made, for it would seem that before Buddha this doctrine had not gained acceptance in India, whilst with him it forms a corner stone for his preachings intended for the people, especially the Játaka legends. Now the still imperfectly ascertained date of Buddha corresponds at least approximately with the fixed date of Pythagoras, namely, B. C. 540-500, or perhaps a little later.

On mere *a priori* grounds it seems in a high degree unlikely that Buddha was the teacher, and Pythagoras the learner. Since direct relations between the two men are not to be thought of, but only indirect ones by way of Egypt or Persia, we must, considering the difficulties of communication in those times, allow at least several decades, even if that be sufficient, for the establishment of such relations. Moreover, the doctrine of transmigration of souls is in itself so agreeable to the human mind as a means of equalizing the injustices of life on earth, by reward or punishment of the actions of men, that it may be regarded as an idea of natural growth. Of course, we cannot affirm of it, as of the so-called Pythagorean theorem, that it gives an accurate result, but it may very well have arisen independently among various peoples, in various parts of the world, without obliging us to assume a mutual borrowing.

When, however, we find Socrates, in the Gorgias, using the formula *τὰ καλὰ, ὠφέλιμα, ἡδέα* (or, as it is rendered in Latin, 'honestum, utile, dulce,') to express the ideal of legislation and morality, this formula agrees so closely with the three Indian objects of living, *dharma*, *artha*, *káma*, and has such an individual colouring, that it is at least difficult to suppose that the conception originated independently in both places.

In India this triad does not appear in the most ancient period, but only in more recent times, so that in this case I do not hesitate to give priority to Plato.

The Brahmans of the Vedic period were not acquainted with the formula. The Buddhists and Jains lay special stress on it. They frequently use the words *dharma* and *artha* together in the senses respectively of 'law or precept,' and 'meaning, or signification of *dharma*,' which differ completely from the sense the same words have when used in combination with the third word *káma*. This circumstance indicates that the triad was formed in consequence of a foreign suggestion.

Just as Greek stories have found their way into the Játaka legends

of Buddha, these Platonic ideas may very well have been transferred in a similar way.

Even the bridge by which they crossed may probably be recognized. For should not the dialogues between the Yavana king Milinda (Menander), and the Buddhist priest Nāgasena, as given in the 'Milindapaṇṇa,' be regarded as connected with the Platonic dialogues? May we not even look upon them as an intentional Indian imitation? Oldenberg suggests that reminiscences of meetings between Indian monks and Greek rhetoricians are preserved in these dialogues.

In the preceding case we have to deal not so much with a doctrine belonging to the peculiar systems of Indian philosophy as with a, so to speak, popular view. Nevertheless, even for these systems the chances of literary history are very unfavourable to their priority as compared with those of the old Greek philosophy, inasmuch as the former, on the whole, belong to a much later period than the latter.

When, therefore, in any direction a special agreement between the old Greek and Indian philosophies is found to exist (such, for example, as may be the case with regard to the Indian atomic theory, developed later in a very peculiar fashion), and that agreement cannot be regarded as a spontaneous, independent, mental product of both peoples, we must always assume a borrowing from Greece.

An example of the contrary may here be noted, though it is concerned with a popular conception rather than with a doctrine of systematic philosophy. In India, besides the above mentioned triad of the objects of human life we find another of a purely ethical kind, namely, a classification of sins into those of thought, word, and deed, which testifies to a very high and pure popular moral consciousness. This triad occurs in the Avesta and Veda, as well as with the Buddhists, and so dates from the Aryan period, during which the later Iranians and Indians still formed one nation.

When, therefore, we find it in our Christian litanies from the time of Pope Damasus in the middle of the fourth century down to Paul Gerhardt ("with heart, mouth, and hands") we must recognize an Indian, probably Buddhist, influence on the western form. Some points of connection with the Protagoras of Plato, as well as with certain biblical expressions, may also be traced, but not enough to establish any systematic ethical doctrine, such as is expressed in the litanies.

In this connection must be considered the question recently propounded by Rudolf Seydel, Jul. Happel, and others, as to how far we may assume possible Buddhist influence on the Christian legends, and even on the gospels themselves.

It is obvious that, even if the supposed influence is established, the

teaching of Christ suffers no disparagement, and is in no wise touched as regards its peculiar meaning.

The question whether parables, such as those of the prodigal son, and the Samaritan woman at the fountain, which occur in nearly identical forms in Buddhist literature are of Christian origin, or, conversely, the result of Buddhist influence on Christianity, still seems to me one that is altogether open. Especially, because I do not agree with those who attribute to the Buddhist texts concerned an antiquity so high as is generally supposed.

But it is quite clear that Buddhism by means of its convents for monks and nuns, its legends of saints, its worship of relics, its towers, its bells, and, above all, through its rich ritual and hierarchical pomp, did exercise influence on the development of Christian worship and ceremonial.

The influence of Indian Buddhism on the development of Gnosticism and Manichæism is also established. The doctrine of the Trinity, likewise, might possibly be connected with the triad of the Avesta,—Ahuramazda, Zarathustra, and the congregation,—as well as with the Buddhist triad, Buddha, Dharma, and Samgha.

It is, moreover, well-known that the two Catholic saints Barlaam and Josaphat simply owe their origin to a mistaken appropriation of a Buddhist legend. Finally, the rosary of the Catholic Church, is, according to all appearance, of Indian origin, and its very name seems to be due to an erroneous apprehension of the word *japamālā*, the Sanskrit term for 'prayer-necklace.'*

But we must also look in the opposite direction, for nowhere does continual give and take more constantly occur than in these matters, which so profoundly concern the human spirit.

When then, for example, it is said in the Kāthaka Upanishad (1, 2, 23):—"This *ātman* (here the term practically is equivalent to 'God') is to be apprehended not through instruction, nor insight, nor yet by much learning, but only by him whom He chooses that through him He may be known," the connection of this doctrine, the idea of which is otherwise foreign to India, with the doctrine of 'election by grace' in the Epistle to the Romans is so apparent that it seems to me that Christian influence must here be assumed. In my opinion the position of this text in literary history, as the work is now extant in the Atharva recension, is in no way inconsistent with this view.

According to Oldenberg (*Buddha*, p. 56, (1890)), however, the Kāthakopaniṣad should be regarded as præ-Buddhist, and, if this be

* *Japā* means China rose in Kīrātārjunīya and Śisupāla vadha (*Benfey, Dict.*)
[V. A. S.]

true, the question must be decided in the converse way. For the doctrine referred to is not one of such natural growth as to justify the assumption that it arose independently in India as well as in Galilee.

As to the Bhagavadgītā it is certain that it shows the influence of Christian teaching; though Lorimer goes much too far in maintaining this proposition.

Wilson long ago traced back to a Christian basis the whole doctrine of *bhakti*, the unconditional, believing devotion to the Lord, that is to the sectarian god with whom the work is concerned.

The frequent designation of the teacher under the traditional epithet of *śveta*, white, or of a name in which *śveta* forms a part, seems to refer to white men, Christian missionaries.

The full information given in the Mahābhārata (12, 12771, *seqq.*) about the travels of the Indian wise men (Ekata, Dwita, Trita, and especially, Nārada) over the sea, as far as Śvetadwīpa, the 'Island of the (*śveta*) white men,' in order to learn there the doctrine of the One God, is intelligible only when understood to refer to the journeyings of pious Indians to Alexandria, and the knowledge of Christianity which they there acquired.

The knowledge of the name of Christ, the son of the divine Virgin, obtained in this way, and further diffused by Christian missionaries and the residence of natives of India in Christian countries, and by the partially divine honour paid to him by his followers could not fail to remind the Indians of the semi-divine Kṛishṇa, son of Devakī, whose name seems to mean divine.

Thus it has come to pass that many Christian incidents and legends, especially those of Christ's birth among the shepherds, the stable, the manger as his place of birth, the taxing by Cæsar Augustus, the massacre of the innocents at Bethlehem, and others of the sort, are repeated in the Indian legends of Kṛishṇa.

The ordinary legends state that the child Kṛishṇa, in order to save him from hostile machinations, was removed on the night of his birth from the lying-in-room by his father and made over to his foster-parents, the shepherd couple, Nanda and Yaśodā. But certain detailed rules concerning the festival of Kṛishṇa's nativity exist, and are found in texts of quite modern date, which narrate the incidents in a different way, that clearly betrays a foreign origin. According to this version, Devakī, the child's mother, stays quietly lying in the manger, nursing the infant, while numerous groups of shepherds, angels, and others stand around blessing and praising. Even the ox and ass are not wanting. The star, which stands still in the sky, and fixes the date for the festival, is Rohiṇī, or Aldebaran.

Concerning the early existence of Christian congregations in India, supposed to have been established by the Apostle Thomas, no doubt can be entertained. According to the testimony of Nílos Doxopatrios, who lived in the twelfth century, the Patriarch of Antioch, even at that late date, sent a καθόλικός, or deacon, to 'Ρωμογυρι, or Rámagiri, in India. In the sixteenth century the Portuguese found the Christians of the Church of St. Thomas in Malabar using Syrian books and Arian forms of worship. They gave themselves a great deal of trouble to convert these heretics. A certain image of Devakí, nursing the infant Krishṇa, which recalls the representations of the Madonna Lactans, may be explained as a result of the delicate diplomatic skill of the Jesuit Missionaries at the court of Akbar the Great, but it is possible that its origin should rather be traced back to an ancient Byzantine motive.

In conclusion, an early reference to Christian missions, in connection, not with the worship of Krishṇa, but with that of Ráma, whose mild form is much more appropriate for the purpose, must be brought forward. I allude to the legend of Sāmbuka, the pious Súdra, which is used by Kálídása in the Raghuvansha (XV, 50), and by Bhavabhúti in the Uttara Rámacharita. (*Act II, Wilson, Hindu Theatre, Vol. I, p. 319*).

In the Raghuvansha version Sāmbuka simply meets his death at the hands of Ráma as a penalty for having applied himself to ascetic practices in order to attain the rank of a god (*surapadam*), although as a Súdra, he was not entitled to do so. He was therefore regarded as a disturber of the public peace, and is stated to have failed in attaining his object (*gatim na prāpa*).

In Bhavabhúti's work, on the contrary, the victim actually appears on the scene as the man-god, in divine form, and gives thanks to Ráma for having been aided by his coming to attain death, and thereby divine rank and blessedness.

K. M. Banerjea, in the preface to his edition of the Nárada-Pancha-rátra, has recognized, and probably with justice, in this legend an allusion to the settlement of Christian missionaries on the coasts of Coromandel and Malabar. It is possible that in the form of the legend as given by Bhavabhúti a faint reference to Simeon of St. Luke's Gospel (II, 25, 29) may dimly be discerned, but, if this be so, Simeon has been terribly disfigured by his Indian disguise.

Last of all, it should be observed that when a modern text, the Sūkranítí, in enumerating the 32 Indian sciences, gives the last place to the *Yávanam matam*, which is explained as meaning 'the doctrine of the unity of God,' the reference is more probably to the Koran than to the New Testament. G. Oppert, however, the editor of this work, considers it to be very old.

Græco-Roman Influence on the Civilization of Ancient India. Supplementary Note.—By VINCENT ARTHUR SMITH, M. R. A. S., Indian Civil Service.

Sir Alexander Cunningham has favoured me with communications which enable me to make certain corrections in and additions to my second paper on Græco-Roman Influence on the Civilization of Ancient India, published in the Journal of this Society for 1892¹.

Concerning the short record dated in the year 68, and numbered II. by M. Senart, I remarked (*page 56 of my paper*) :—"It is not known to what object it was attached, but doubtless it was a sculpture of some sort." M. Senart's words are (*page 21 of his paper*) :—"Le lieu d'origine de cette courte inscription ne m'est pas connu. Il est probable que, comme presque tous les monuments réunis au musée de Lahore, elle vient du pays des Yusufzais, sur la rive gauche du fleuve de Caboul, de Jamalgarhi, de Takht i Bahi, ou des environs.

Les caractères occupent une longueur de 97 centimètres ; on peut en estimer à 3 centimètres et demi la hauteur moyenne. La hauteur de la pierre est de 10 centimètres. Ignorant jusqu'à sa provenance, nous n'avons bien entendu aucun renseignement sur l'objet qu'elle accompagnait primitivement."

Sir A. Cunningham, in a letter dated 17th June, 1892, clears up all doubts as to the place from which the inscription came, and proves that I was mistaken in guessing that it had been directly attached to a sculpture of some sort.

¹ See J. A. S. B. Vol. LXI, Part I for 1892, p. 50. Ed.

He writes:—"Regarding the inscription of S. 68 published by M. Senart, I can say that it was on a very large rough stone, which may have been inserted in a wall, but which could not have been the base of a statue. It was 5 feet 9 inches long, and from 3 feet to 1 foot 9 inches in breadth. The legend was on the edge. It weighed 12 maunds 7 seers [= 1008 lbs. avoirdupois, = 457 kilogrammes], when I got it, but I cut it down to 4 maunds 3 seers, before sending it to the Lahore Museum, where, as I conclude from your account, it is left unregistered as presented by General Cunningham—from Máji, 4 or 5 miles to the south of Fatehjang, ancient Chása, and to the south-west of Ráwal Pindi."¹

The inscription is certainly in the Lahore Museum, because M. Senart expressly states at the beginning of his essay that all the monuments described by him belong to that museum, and were communicated to him by the curator, Mr. L. Kipling.

Concerning the dated Hashtnagar inscription (*page 55 of my paper*) Sir A. Cunningham says that "The date may be either 274 or 284, but it cannot, I think, be referred to 78 A. D." I have already given up the suggestion to refer this date to the Saka era, and have assumed that the approximate date of the inscribed pedestal is A. D. 220 or 230. Sir A. Cunningham observes that the Panjtár inscription of a Gushán, or Kushán, Mahárāja, dated S. 122 is the latest "which can be referred to A. D. 78." If that record is rightly referred to the Saka era its date will be A. D. 200, which is not far from the approximate date obtained for the Hashtnagar inscription by using the era of Moga or Gondophares. I think it may now be safely assumed that the use of the Gandharian (Kharoshtrí) character in Gándhára survived into the first half of the third century A. D. The disuse of this character in India proper does not imply its disuse in Gándhára. It is, no doubt, true that the Gandharian character is not used on the coins of Vasudeva, of whom we have an inscription in old Nágari characters dated S. 98, = A. D. 176, and that coins of Kanishka (KANHPKO) and Vasudeva (BAZOΔHO) which Sir A. Cunningham believes to be posthumous, bear legends in old Nágari. But I see no difficulty in believing that at the same time the Gandharian character had a limited local currency for some purposes within the region of Gándhára.

When quoting (*page 59*) Prof. Rhys Davids, as authority for identifying the "village" Kalasi in the "island" of Alasanda, where king Milinda (Menander) was born, with the *Karisi nagara*, or town of Karisi

¹ For a notice of Fatehjang, see Archæological Survey Reports, Vol. XIV, p. 24.

mentioned on a coin of Eukratides (*circa* B. C. 190), I was not aware that the identification had been made long before by Sir Alexander Cunningham, who published it in the Numismatic Chronicle for 1869, and again two years later in his 'Ancient Geography of India.'¹

Sir Alexander Cunningham is of opinion that in the passage quoted by me from Prof. Rhys Davids' translation of the 'Questions of King Milinda,'—"There is an island called Alasanda. It was there I was born,"—the word *dípa* (Sanskrit *dwípa*) should be translated 'region' or 'division of the world' rather than 'island.' He cites in support of this rendering the well known compound *Jambúdwípa*, and takes *Alasandadípa* to mean "the country of which Alasanda was the capital," Kalasi being "the same as Alasanda itself."

If, in the passage quoted, the word *dípa* does not mean 'island', there is, apparently, no reason for supposing the Alexandria in question to have been on the Indus. Sir A. Cunningham places it, as will be seen from the passage to be quoted presently, at a village named Opíán or Hupíán, 27½ miles north of Kábul. Whatever be the true position of Alexandria or Alasanda, Prof. Rhys Davids' note at page 127 of the 'Questions of King Milinda' referring to "Alexandria (in Bactria) built on an island in the Indus," is not quite accurate. The Indus was never included within the limits of Bactria, though the banks of the river may at times have been included in the dominions of the Bactrian kings.

My quotation (*same page*) from Professor Percy Gardner was also unfortunate. He describes the legend on the rare coin of Eukratides, giving the name of the town of Karisi as being "the conjectured reading of General Cunningham." This remark is inaccurate. The only word at all doubtful in the reading of the legend on the coin referred to, was *devata*, and the reading of this word has lately, Sir A. Cunningham assures me, been definitely established by a second specimen of the coin. The reading of the name 'Karisí' on the coin was never doubtful.

In order to prevent any further misconception, and to show clearly Sir A. Cunningham's views concerning the probable situation of Alexandria, = Alasanda or Alasadda, = Kalasi, presumably identical with Karisi, I had better quote in full the relevant passage from the 'Ancient Geography of India,' page 28, which is as follows:—

"If I am right in identifying Begrám with the Kiu-lu-sa-pang of

¹ Prof. Rhys Davids informs me that he also was unaware that Sir A. Cunningham had made the identification previously, and will gladly take the opportunity of the impending publication of the second volume of the 'Milinda' to acquaint his readers with the fact.

the Chinese pilgrim, the true name of the place must have been *Karsana*, as written by Ptolemy, and not *Cartana*, as noted by Pliny. The same form of the name is also found on a rare coin of Eukratides, with the legend *Karisiye nagara*, or 'city of Karisi', which I have identified with the *Kalasi* of the Buddhist chronicles, as the birthplace of Raja Milindu. In another passage of the same chronicle,¹ Milindu is said to have been born at *Alasanda*, or Alexandria, the capital of the *Yona*, or Greek country. *Kalasi* must, therefore, have been either Alexandria itself, or some place close to it. The latter conclusion agrees exactly with the position of Begrám, which is only a few miles to the east of Opián. Originally two distinct places, like Delhi and Sháh Jahánábád, or London and Westminster, I suppose *Opián* and *Karsana* to have gradually approached each other as they increased in size, until at last they virtually became one large city. On the coins of the earlier Greek kings of Ariana,—Euthydemus, Demetrius, and Eukratides,—we find the monograms of both cities; but, after the time of Eukratides, that of *Opiána* disappears altogether, while that of *Karsana* is common to most of the later princes. The contemporary occurrence of these mint monograms proves that the two cities were existing at the same time; while the sudden disuse of the name of *Opián* may serve to show that, during the latter period of Greek occupation, the city of Alexandria had been temporarily supplanted by *Karsana*."

The Alexandria above referred to is the city founded by Alexander, and described by Pliny as "Alexandria Opianes", situated "sub ipso Cancaso". The modern name of the site identified with it is said to be variously spelled Opián, Opiyán, and (Malik) Hupíán.

The Maháwanso calls *Alasanna* "the city, or capital, of the *Yona* country", *Yona naggardásanna*. (*Turnour*, page 171). *Turnour* himself writes the name as *Alasadda*.

I have not specially studied the ancient geography of Ariana, and therefore abstain from pronouncing any personal opinion on the geographical questions raised in the preceding extracts.

¹ *Milindu-praṣṇa*, quoted by Hardy, in 'Manual of Buddhism', pp. 440, 516.

