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LASSEN'S HISTORY OF INDIAN COMMERCE (VIKRAMADITYA TO THE LATER GUPTAS)

BY

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Reprinted from "The Journal of the Bihar and Orissa Research Society"
September 1924.

PATNA :

BIHAR AND ORISSA GOVERNMENT PRINTING,
1924.

Lassen's History of Indian Commerce (Vikramaditya to the Later Guptas).

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Translators' Introduction.

THE subject of Indian commercial history has become a popular study. The translators, having noticed that the researches of Lassen, the first writer on the subject, were not, as a rule, availed of by Indian writers and students, felt the necessity of giving an English translation of Lassen's chapters on the subject. In the translation, they have endeavoured to adhere to the original more than to the elegance of language which has to be sacrificed more or less in almost every rendering of a scientific nature.

Since Lassen's time, Indology has progressed much, but Lassen can never be superseded. Lassen is classical in the field of Indian history. Without Lassen, for generations after, no one could have easily conceived of producing an Indian History of Hindu times dealing with political, social and intellectual development. The wonder is that no other author, except Duncker on a much smaller scale, has since attempted a comprehensive work like Lassen's *Indische Alterthumskunde*. The third volume of this work "which forms one of the greatest monuments of untiring industry and critical scholarship" as the *Encyclopædia Britannica* (XVI—236) has rightly put it, was published in 1858. Its first chapter deals with the history of commerce (*Geschichte des Handels die Zeit Von Vikramāditya bis auf die spätern Gupta*) from the time of Vikramāditya up to that of the later Guptas. Ours is a translation of that chapter. It might be useful to prepare a Bibliography bringing the

subject up to date and the translators hope that it would be done later.

Abbreviations used in the Translators' Notes.

Schoff.—The Periplus of the Erythraean Sea, translated from the Greek and annotated by Wilfred H. Schoff, A.M., Longmans, Green & Co., 1912.

Gerini.—Researches on Ptolemy's Geography of Eastern Asia by Colonel G. E. Gerini, M.B.A.S., Asiatic Society Monographs, Vol. I., London: Royal Asiatic Society and Royal Geographical Society, 1909.

[From next page begins the Translation.—Trs.]

History of Commerce.

Review of the Contents.

Introductory remarks.—Reason for the growth of maritime commerce from the Red Sea to India. Its extension to further India and as far as *Kattigara* or Canton. Indian colonies in Further India, in the Indian Archipelago and in south-eastern China.

I.—The wares. The sources. Articles of export.—From the mineral kingdom. The precious stones. The diamonds and pearls. The wares from the vegetable kingdom, cotton, silk, sugar, dying stuffs. Spices, perfumes. Wares from the animal kingdom, ivory. *Pinicum*, Tortoises. *Seric* skins. *Murrahish* vessels.

Articles of import. Metals, silver vessels, money. *Stibium*, coral, precious stones. Frankincense, wine. Linen clothes and garments. Musical instruments.

Distribution of the wares among the ports. *Barygaza* the chief emporium of India.

II.—The commercial nations. Fate of commerce.—The growth of maritime commerce between the Indian countries and the Roman empire. Participation of Greek and Roman merchants therein. Of Indian merchants. Their distant voyages. The Indian embassies. That to the emperor *Augustus*. That to the emperor *Claudius*. That to the emperor *Antonius Pius*. *Bardesanes*. That to the emperor *Julianus*. The practice of navigation. India, the centre of the commerce of the world, the terminus whereof was Rome in the W. and Canton in the E. Slight participation of the *Nabateans* in Indian commerce. Independent participation of the Indians in the commerce of Alexandria in the Mediterranean sea.—*Practice of land-commerce.* Its ramifications. Firstly, across Bactria through Media, Assyria and Asia Minor towards the western countries. Secondly, across Bactria on the Oxus over the Caspian Sea, the Caucasus and to the Black Sea, *Sinope* a chief seat of this branch.—*The influences of commerce on the circumstances of the Romans and of the Indians.* No deep after-effects of this commerce. By the wares

exported from India it ministered considerably to the love of pomp, to the voluptuous and expensive propensities of the Romans, and thereby greatly contributed to the deterioration of Roman morals. Secondly, Indian commerce enriched Roman merchants. Influence of the commerce with the Roman empire upon the Indians. No action upon the views, circumstances and customs of the Indians. Much cash brought to India from the Roman empire. India but little enriched by this commerce. By this commerce the Indians obtained the division of the year into weeks, and the names of the days from the seven planets. The third ramification of commerce by land. Firstly, across Bactria with the *Serd*. Secondly across Sikkim to China.

Second Period.—The time from Vikramaditya to the later Guptas.

Introductory Remarks.

In the period between Vikramāditya and the fall of the later Gupta dynasty, three circumstances co-operated in greatly promoting maritime commerce from the Red Sea to India, and in carrying it to the highest point it ever attained in antiquity. The first circumstance was the extensive dominion and great opulence of the Romans, who became, by the possession thereof, addicted to voluptuousness and to love of pomp. Of all countries, India furnished them with the most varied means to satisfy these inclinations. The second favourable opportunity was the conquest of Egypt which became in the year 31 B.C. a Roman province; thereby the Romans came into possession of Alexandria, which city had, in spite of its position so favourable to commerce, not yet quite fulfilled the purpose of its great founder. The efforts of the Ptolemies to encourage this branch of commerce by establishing ports on the east coast of Egypt and by building roads to put them in communication with the Nile-valley, have already been noticed, but at the same time the remark has been made, that during the dominion of the Lagides and even at the time of Strabo, only few merchants ventured to undertake commercial voyages from Egypt to India.¹ Only as late as the time of the Roman

¹ Vol. II, pp. 588, 589 and note 2.

emperors, Alexandria excelled her rivals and acquired the almost exclusive possession of Indian maritime commerce with the countries on the Mediterranean Sea. This pre-eminence of Alexandria was materially promoted by the frequent wars of the Romans and the Parthians since the unfortunate attack of M. Licinius Crassus upon the Parthians in the year 53 B.C. and by the deeply-rooted enmity that subsisted among these two nations; the Arsakides were masters of the inlets to the Euphrates from India, and though already the usual wars between them and the Roman emperors in the countries situated west of the Euphrates, must have disturbed commerce by land, fresh interruptions were added, because (no doubt from hatred against the Romans) the Parthian Kings endeavoured to exclude the Greek and Roman merchants from the commerce with India. This must have given an impulse to the commerce by sea, from the Red Sea to India. It must not, however, be overlooked, that not long after the death of Mithridates the Great, which took place about 136 B.C., the regions about the Oxus ceased to obey the Arsakides¹ and they were accordingly not able to put any obstacles into the way of transporting Indian goods along the Oxus, across the Caspian Sea, the Caucasus and Kolchis to the Black Sea. That such a transport really took place during the time of Pompey and of the emperor Augustus, is certain from the testimonies of Strabo and of the older Pliny.² Further it is to be remarked that during the time of the Roman emperors a branch of the Arsakides reigned in Armenia, whose members frequently obtained help from the Roman emperors; and in general the possession of the Armenian Throne formed the cause of quarrels between the Roman emperors and the sovereigns of the great Parthian empire. Accordingly, the Armenian Arsakides probably did not oppose the transit of Indian wares through their country. With this agrees the fact that the Aorses who dwelt north of the Aral Sea and of the Caspian Sea, in the north of the

¹ Vol. II, p. 321 and p. 265 foll.

² Vol. II, p. 279 and p. 531, Note 2.

Caucasus and in the east of the sea of Asow, brought Indian wares from Media and Armenia, and carried them to the peoples living near the Black sea.¹ As it is narrated to the praise of the Roman generals that during their wars they kept an eye also on the promotion of commerce,² we may presume that they acted in the same manner in their contests with the Armenian Arsakides. The growth of maritime commerce between the ports of the Red Sea and India, was thirdly, yet specially, promoted by the discovery of the south-west monsoon which the navigator *Hippalos* had made, or rather by the re-discovery of it, because there cannot really be any doubt that the Phœnicians who were so well acquainted with navigation, knew this and utilised their knowledge in their Ophir-voyages.³ Accordingly we may presume that during the long time whilst the Phœnicians had not pursued maritime commerce on the Red Sea, this knowledge was lost. *Hippalos* observed the position of the ports in Arabia Felix and the shape of the coasts of that sea, and was the first to steer across the high seas, instead of navigating along the coasts like the more ancient navigators. In his honour the south-west monsoon was named *Hippalosr*.⁴ As the author of the *Periplus*, who has preserved us this information, and who speaks of the discovery of *Hippalos* as already known and not a fresh one, we may put it back as far as the beginning of the Christian era. The example of *Hippalos*, was, until the time of the Alexandrian Periegete followed by the navigators of the Indian ocean. Some of them steered from Kane⁵ a town on the south coast of Arabia, in the country of the Chatramotites or Adramites, the present Hadramant⁶ immediately out into

¹ Vol. II, p. 619.

[Schoff, 1912, pp. 6, 8, 13, 45, 53, 212, 227, 228, 229, 230, 232, 233.—Trs.]

² Plinius H. N. XXVI 9. 1.

³ See II. p. 59. [Cf. Schoff. 97, 151, 160, 161, 175, 260.—Trs.]

⁴ *Peripl. Mar. Erythr.* p. 32, and on the time of its composition II, p. 538. That libanoto's means the south-west monsoon was shown by Vincent in *The Commerce and Navigation of the Ancients*, I, pp. 49 and 123.

⁵ [p. 116.—Trs.]

⁶ On the position of Kane cf. II, pp. 583.

the high sea, and others from a not more closely designated port in the opposite Cinnamomifera Regis of the ancients; it must be looked for in the vicinity of the present Cape Gardafui.¹ Some of these merchant ships proceeded to *Scythia* or more accurately for the port *Patala* belonging to Indoseythia; others to the well-known port of *Barygaza*² in India; and lastly others to the more southern coast—country *Limyrice*.³ They remained not longer than three days in the ports, from which they began their voyage across the sea, and spent their remaining time on the voyage, during which they sailed past the wide bay formed by the south-east coast of Arabia and the Indus-mouths. On the adventures of the voyages from the Red Sea Pliny gives us some closer information.⁴ *Nearchos* had sailed with his fleet along the shore from the mouths of the Indus to those of the Tigris and Euphrates. Also afterwards on their voyage from the promontory of *Syagros*⁵ on the south-east coast of Arabia to *Patala*, the navigators did not leave the coast, although they made use of the south-west monsoon. Afterwards a nearer and safer course was discovered, by sailing from the just mentioned Arabian promontory to the Indian port *Zizelus*.⁶ On the state of the commerce at that time between the Romans and the Indians, Pliny expresses himself in his succinct style as follows: "This manner of sailing was continued long until the merchant discovered facilities, and India was brought nearer by the love of gain. Every year ships departed on which

¹ According to the *Peripl. Mar. Erythr.* pp. 7, 8, 17 and 23.

[² Schoff. p. 298.—Trs.]

[³ *Ibid.* p. 205.—Trs.]

⁴ VI, 26, 5 foll. where Favonius also mentions that the wind was there called *Hipphas*; shy this name in the present case the south-western monsoon must be understood.

⁵ This is probably the Ras Sherbedad of our times.

⁶ This port is, in the *Periplus of the Red Sea*, called *Meli Zigera*; cf. II, page 540. It is now called *Zyghar* or more correctly *Gaighar* because according to a communication made to me by *Kigert* the first form contains the Portuguese pronunciation of the G. The present name must have originated *Gajagada*, i.e., victory protection. According to *Walter Hamilton's A Descript of Hindustan* II, p. 214, *Gajagada* is situated in 17°33' N. Lat.

cohorts of archers were embarked, to defend them against the attack of the pirates who molested the navigators greatly. It is worth mentioning that in no year India swallows less than five hundred times hundred thousand sesterii from this empire, and sends back goods for them, which are sold among us with a hundredfold gain".¹ At that time the merchant-ships visited especially *Muziris* ² or Mangalor. On the now so much accelerated voyages to India and their termini I have already on another occasion communicated the data of the Roman author.³

The two consequences of the frequent repetitions and accelerations of their voyages to India must have been that the Greek-Roman merchants extended their commercial undertakings further than before, and that they visited also the Coromandel coast. This will have been the case only after the presence of the author of the Periplus of the Red Sea in India, because we had not gone further than Cape Comorin, whereas Pliny on the other hand must have had before his eyes at least the statement of an India-man, in which the distances from the town *Perimula* on the island *Manar* ⁴ till the mouths of the Ganges were given in Roman paces.⁵

Pliny seems to have no acquaintance at all with the eastern Indian peninsula, whence it follows, that at the time when he composed his rich and valuable work, the Greek and Roman merchants had not yet entered into commercial relations with this very distant country; on the other hand the unusual familiarity (of this diligent collection) with the natural products of anterior India shows, that it had in his time already been

¹ As the *Sestertius* is somewhat more in value than $1\frac{1}{2}$ silver-groschen 50,000,000 sesterii make in a round sum 2,650,000 Thalers.

[² Schoff pp. 44, 178, 203, 204, 205, 208, 212, 233. Gerini, 670 N. f.—Trs.]

³ Cf. II, p. 590.

[⁴ Schoff. pp. 148, 156, 210, 222, 230, 231, 241.—Trs.]

⁵ Cf. II, p. 541. and *Pliny* VI. 23, 2. Afterwards in the *History of the Greek-Roman Knowledge of India* I shall show, that this passage cannot have been drawn from the writing of *Megasthenes*. and I here observe once for all, that I shall afterwards state the grounds for my determinations of the towns mentioned in this section.

visited by numerous Greek and Roman merchants, from whose partly oral and partly written communications he culled his information. Although the geography of *Ptolemy* furnishes but slight direct evidence for an acquaintance with the Greek-Roman commerce of India, it nevertheless contains particular data which demonstrate, that in the interval between their composition and that of the natural history of Pliny, commerce between the Roman empire and the Indian countries had considerably developed and enlarged itself. Firstly we learn from the geography of Ptolemy, that he had at his service journals of travellers wherein the distances of the places were marked down, not only from the promontory *Kory*, the present Kalymeer, till the mouths of the Ganges, but also from them to the golden peninsula of Malacca and thence to *Kattigara* or Canton, in stadia.¹ As far as that a certain *Alexandros* had gone. Now the merchant-navigators sailed obliquely across the gulf of Bengal either from Kalinga Patana or Kikakola to *Chryse*,² which answers nearly to the present Pegu, or from Palara, the present Naupara, south of the Mahanada to *Saila* or Thwai-dwai. The frequent travels of the Greek and Roman merchants appear secondly from the rich catalogue of towns which Ptolemy enumerates in anterior India. If it is less rich in the towns of Further India, the reason is because Further India was more seldom visited by merchants from the Roman Empire than anterior India, and also because of the less civilized state of the peninsula.

A third ground for the supposition of a frequent presence of Greek merchants in India exists in the Hellenic names which are in the geography of Ptolemy attributed to Indian towns and must have originated from Greek merchants. *Naustathmos* correctly designates a port on the coast of the island *Bete* on the west point of the peninsula of Guzerat. *Theophila* is the Greek name of a town, which is now called *Surdhaur* and is situated in the interior of this peninsula, nearly in its centre; it shows

¹ Ptol. I, B, 1 foll. and 14, 1. foll; then VII, 1, 15.

[² Schoff, pp. 45, 46, 47, 48, 227, 246, 250-261.—Gerini, page 880.—Trs.]

that it must have been a town frequently visited by the Hellenes. Its Sanskrit name is *Surādara*, i.e., worship of the gods. *Byzantion* where at present *Vijayadurga* on the Malabar coast is situated, must have been a town founded by merchants from one of the same name in *Propontis*. Such names occur also in Further India. *Triglyphon* is the Greek name of the town Arakan which was in Sanskrit called *Vaiśālī*.¹ Most of the examples of this kind occur in Taprobane.² They are, with only two exceptions, Hellenic translations of the indigenous names; thereby they just demonstrate that numerous Greek merchants used to sojourn in this island.

If I assume that the extension of the commercial undertakings of the western merchants and their travels to Further India and to the Indian Archipelago in order to practice commerce there, were called into being by frequent intercourse with the Indians, and that therefore a material participation in the enlarged acquaintance with Further India and the Indian Archipelago recorded in Ptolemy's geography, must be attributed to the Indians, I support this assertion by the following grounds. Afterwards I shall demonstrate that the island of the Indian archipelago visited and described by Tambulos is *Bali*; but as his narrative has been used by Diodoros who wrote his history in the last third of the first century B.C., and some time must have elapsed before the Indians of the western peninsula, settled in Java, could transfer their laws and customs to the adjoining Bali, therefore the immigrations of those Indians must have taken place at the latest about the middle of the first Pre-Christian century, rather somewhat earlier. The propagation of the inhabitants of anterior India to these parts of south-eastern Asia is shown by the following names contained in the geography of Alexandrinos: *Kokkonagara* was situated in the peninsula of Malakka in the interior country at present called Kaija; *Perimula* on the eastern coast thereof, where at present the Jantalem is situated, must on account of the same

¹ Cf. II, p. 1033.

² [Schoff, p. 47.—Gerini, pp. 422, 453, 594, Note 3, 646, 651.—Trs.]

have been a foundation of the inhabitants of a town of the same name on the island Manaar on the north coast of Ceylon. *Siada*, on the lower Menam river in Siam, was on the site of the present capital of this country and belonged to the *Sindai* a nation of those parts, who appear on account of their name to have been immigrants from anterior India; the town *Aganagara*, i.e., town of the mountains or of the trees, where *Kang-Kat* or *Hulian* in south-western Kamboja exists at present, can, on account of its Sanskrit name, have been a town established only by Indians. To these names yet the following is to be added. The three islands situated on the east coast of Sumatra which are at present called Polo-Rapat, Pulo-Pangor and Rantau, are by the Alexandrian geographer called Sindai, and must have received this name from Indians, who had settled on those Islands inhabited by anthropophagi.

If the preceding names testify to the propagation of the Indians to Further India and to the Indian archipelago, two others lead us to the undeniable suspicion that Brahmans had settled in south-eastern China. These are called *Bramma*, *Ambastes* and *Ambastai*.¹ The first name designates a town the position of which answers to that of the present *Se-min fu*; the second to the river Ngan-nan-Kiang to the south of Canton. The town can have been once settled and inhabited by Brahmans. The second occurs again in two other passages; firstly in the form *Ambatai* in the country of the Paropanisades; secondly in the form *Ambastai* in the upper valley of the Tapti and the adjoining mountains.² Both these forms answer to the Sanskrit *Ambastika*, by which name in the Epics a great nation fighting with clubs, but in the code of laws a mixed caste, is meant.³ But as a portion of these widely spread aborigines of anterior India can not be supposed to have existed also in distant south-eastern China nothing else remains but to assume that the Brahmans of these parts had applied the indigenous name to

¹ Ptol. VII 3, 2.

² Ptol. VI, 8, 18, and VII, 1, 66. The position of these two peoples I shall afterwards accurately point out.

³ Cf. I. n. 820.

a barbarous tribe among the Chinese. That these priests living in a *Mlechchha* country maintained an intercourse with their own countrymen is quite natural ; and afterwards it will appear from the explanation of the narrative of *Iambulous* and of his journey that the sea-way from the mouths of the Ganges to Java and Bali was already known to, and used by, the Indians. Accordingly there exists no objection to the view that Indians undertook voyages to Siam, Kamboja and to south-eastern China. I think therefore that I may assert that the merchants from the Roman empire who visited the east coast of India after the time of Pliny, met among the inhabitants thereof an acquaintance with the voyages to Further India and to the Indian archipelago, and with some knowledge of these countries. They utilised the former, and brought the latter to their country, where they served Ptolemy as sources in the elaboration of his geography.

For the high-ways of commerce connecting the separate portions of India with each other, as well as for those by which it dealt with foreign countries, I may refer to my former treatment of this subject.¹ On the other hand, to the sea-ports mentioned at that time yet two must be added, which become prominent only in the period of time now engaging our attention ; then a former assertion must be preliminarily rectified. Of the two emporia the one is called *Simylla*, called by the Indians *Timylla*, and is the present Basscin, in the vicinity of Bombay.

The second port is Tamala and is no other than the Bassein situated in south-western Pegu. The rectification refers to the southernmost part of the Malabar coast, where it is more correct to distinguish the emporium Balita,² mentioned in the *Periplus* from the town *Balbala* situated on this coast, than to identify them.³ On account of its excellency the first port will be the present Kalikat or more correctly Kālikoda, the second Kranganor or Kudanganor.

¹ Cf. II, p. 520 foll.

[² Schoff, pp. 46, 234, 235.—Trs.]

³ As I have done before according to Vincent's precedent; See II, p. 41, Note 2.

I

Wares.

After these remarks I shall point out the wares said to have been imported into or exported from India during the period from 57 B.C. till 319 A.D. As far as the exchange of wares between the inhabitants of the separate parts of India is concerned, we have thereon but few data at our disposal the mention whereof would be useless, because it would give us only a very imperfect result ; therefore only the general remarks stand in this place, that the interior commerce of India was probably subject only to slight oscillations, because it is founded on the different possessions of the gifts of nature in the separate parts of India ; only in the products of industry, alterations may have taken place, accordingly as a country rejoiced in peace and tranquillity and its inhabitants could concentrate themselves undisturbed, to quiet pursuits, or was visited by wars, which hindered merchants and artists from devoting themselves unembarrassed to their occupations. These alterations however, escape our researches.

For the knowledge of the Indian articles of export the natural history of *Pliny* offers the richest source, because he mentions not only many wares brought from India to the capital of the Roman empire, but also describes some of them more accurately and indicates the use made of them by the Roman men and women who had become voluptuous at that time and considered articles brought from distant India as great luxuries. In some cases he also mentions the high prices of the Indian wares, but on the other hand only seldom mentions the goods imported into India from the western countries. The want is supplied by the small treatise of the Alexandrian merchant, which, as we know, had been used by *Pliny*, and partly perfects his data, as far as the articles exported from India are concerned. We are also indebted to this treatise alone for the information about the distribution of these goods among the separate emporia, and in a few cases also for the origin of the Indian goods. The statements of this anonymous *Periegete* are partly confirmed and

supplied by an ordinance of the emperor *Marcus Aurelius Antoninus* and of *Titus Commodus Antoninus* in the digests¹ which had been issued during their simultaneous reign in the years from 176 till 180 A.C. That ordinance says that no fault is to be found with the customs house officers if they do not inform the merchant during his transit, of the amount of the duties; but that they must avoid cheating the merchant if he has indicated his goods.

In the following paragraph the articles subject to duty are enumerated. As the majority of the goods, the origin whereof is indicated, are Indian and besides only Arabian onyxes and Parthian and Babylonian skins are mentioned, this command will have to be referred to Alexandria, which was at that time the chief emporium of Indian commerce, especially, as that city was connected with Babylon by a commercial road.² The other data still existing on this subject in the writings of classical antiquity, are too unimportant and isolated to be pointed out here already; accordingly they will be noticed only afterwards in their proper places.

In the following review I shall enumerate the wares not according to the emporia, but I shall, on account of greater clarity, arrange them according to the three kingdoms of nature to which they belong, and shall only at the conclusion point out the ports, from which they have been exported or to which they have been imported.³

To begin with the simplest articles, the Roman artisans in marble made use of Indian sand to polish the former after having burned the latter.⁴ A previously unknown purple colour

¹ XXXIX, IV, 5—7.

² Explanations of the wares mentioned in this ordinance occur in *Cl. Salmasii Exercitationes Pliniana* which I shall quote according to the ed. of 1683, and in the well-known work of *Vincent II*, p. 386 foll.

³ I shall designate the wares mentioned in the digests by D, and those in the *Periplus* by P, and I shall indicate the goods named by Pliny according to the passages where they occur. The places of the *Periplus* pertaining hereto occur on pp. 5, 9, 22, 24, 28, 29, 32 and 37.

⁴ *Plinius* XXXVI. 9, 2.

was obtained from the slime adhering to the bamboos in the rivers, which when rubbed up yielded a black, but when dissolved produced a wonderful purple colour.¹ The Indian crystals were preferred to all others.² Of the metals the subjects of the Roman Emperor received but one, the Indian iron, which was so much esteemed by foreigners on account of its excellence.³ The case was quite different with precious stones in which India is known to be very rich. The author of the *Periplus* stated that many kinds of splendid precious stones were imported to Nelkynda⁴ and were no doubt again exported.⁵ The author of the Roman Natural History informs us, that India bartered lead for its pearls and precious stones.⁶

To this diligent collector we are also indebted for remarkable data concerning the properties and uses of the Indian precious stones. Herein he made use of many writings now lost, the authors whereof, such as *Sotakos Sudires* and *Zenothemis* seem especially to have treated of precious stones.⁷ At all events from the many citations of passages from lost books treating on this subject it appears, that in the opinion of the Greek-Roman world of that time gems had attained high significance and were multifariously used. But as India furnished the Greeks and Romans with some of the most costly precious stones, it had materially contributed to their estimate and value.

¹ *Plinius* XXXV, 37, 27, 1 and 2. It is an error to say that this colour was produced by the pus and blood of the dragons and elephants. It is confounded with the colour named *dragon blood* (as mentioned in the ed. of Delafosse IX, p. 314, no. 7), which is obtained from the resin of the tree *Pterokarpus Draco* Lin.

² *Ibid.*, XXXVII, 9, 1.

³ *Id.*

⁴ [Schoff pp. 44, 203, 205, 207, 208, 211, 215, 233, 234, 236, 237, 254, 256, 273.—Trs.]

⁵ Page 32.

⁶ *Plinius* XXXIV, 48, 3.

⁷ Pliny XXXVI, 25, 3 and 38, XXXVII 11, 5; 23; 24, 1; 51, 1. and 32, 2; then X, 36, 4. XXXVI, 12, 1 and XXXVII, 35, 1; 56, 1; lastly XXXIV, 18, 7. XXXVII 11, 4; 24, 1 and 24, 1.

According to the *Periplus of the Red Sea* onyxes formed an important article of exportation among the other Indian precious stones, and according to Pliny the Indian onyxes were the most excellent after those found in Karmania.¹ *Zenothemis* had reported that in India there were several kinds of onyxes : fire-colored, black and variegated ones ; they were surrounded by white veins like eyes ; on some, veins occurred with oblique eyes. According to *Sotanes*, another author, the Indian onyxes were fire-colored with one or several white surrounding circles, and were thereby distinguished from Indian sardonixes ; according to him they were flesh coloured.

After the onyxes most appropriately the sardonixes come, because as among the Sardes the colour resembles that of the flesh, so that of the sardonixes resembles the colour of the flesh which shines through the scales. This was the distinguishing quality of the Indian sardonixes ; all others which did not possess this transparent colour were called blind ones.² The chief place where sardonixes were found were the Rāgapippali-mountains between the lower Narmadā and the lower Taptā, which were for this reason by Ptolemy called the *Sardonyx* mountains, and a portion whereof was called by the ancient Indians Vaidūrya, which word probably designates a kind of onyx.³

That also hyacinths were exported from India appears from the *Periplus of the Red Sea* as well as from the Roman code of laws. It is true nothing is said in these writings of two other kinds of highly esteemed precious stones ; but the exact acquaintance of the author of the Roman Natural History with them cannot be doubted. On account of their perfect, beautiful, purple colour, the Indian amethysts occupied the first rank, and dyers attained their highest aspirations when they succeeded in producing this colour on their dyed clothes.

Indian amethysts spread a mild light and did not dazzle the eyes by their sparkling like that of the carbuncles.⁴ According

¹ Pliny XXXVI. 12, 2, and XXXVII, 23, 1 and 2.

² Pliny XXXVI 23, 2.

³ Cf. I, p. 573, note 1.

⁴ Pliny XXXVII, 46, 1 and 2, and 41, 1.

to the opinion of the Roman author, a second kind of amethysts possessed less value because it approached the hyacinths. The Indians themselves must however have thought differently because they called their colour *socon* and these precious stones themselves *sacondion*; if this colour was weaker it was called *sapenas*. But as in Sanskrit *Sakuna* means a thing which is of happy presage, therefore *Sakunada*, as the name of this amethyst must have been in Sanskrit, must imply that the Indians attributed to this precious gem a force which brought happiness. *Saphena* means, 'provided with foam'; accordingly the word indicates the weak splendour of these precious stones. The second Indian gem the early propagation of which among the Romans, is, by the communication of Pliny on it, placed beyond all doubts, was the opal.¹ According to him India was the only mother of these noble stones, which were next in value to emeralds, although he could scarcely comprehend the ground for this estimate if opals were compared with the repute of other very costly precious stones. As an example of the extraordinary value which opals had attained in the eyes of the Romans, Pliny adduces the following fact: *Antonius* the Triumvir proscribed, on account of an opal the senator *Nonius*, the son of *Struma Nonius*. The latter took in spite of the Triumvir, of all his treasures this opal-ring away in his flight, and its value amounted according to the most probable computation to 2,600,000 sesterii or to about 104,300,000 dollars.² Probably this extraordinary value was by opulent Romans attributed to opals on account of their wonderful play of colours, of which the author of the Roman Natural History had himself been an ocular witness.³ He informs us at the same time that the Indians were not able to counterfeit any other gems as skilfully as opals. This they effected by the admixture of glass. The statement of the Roman author that India alone furnished these precious stones, is confirmed by the occurrence of real and of semi-opals in

¹ Pliny XXXVII, 21, 1 foll.

² Cf. note 11 of *Delafosse* in his edition IX, p. 617.

³ Pliny XXXVII, 22, 1 foll.

Vigayapura, Sitabuldi, Sawilghara, Doondergaon and Bawari in the Dekhan.¹ This circumstance makes it necessary to seek out the name of this precious stone in the Indian language and not to derive it from Greek as a celebrated mineralogist had done, according to whom '*Opálíos* is a derived word, and strictly means altered face : an explanation that sins against the best known rules of Greek Grammar. As *Upala* means in Sanskrit not only stone and rock, but also a kind of precious stone, hence certainly an opal, the Greeks, and from them the Romans, obtained with this gem also its name.

Whether the precious stone named *Kallaína* in the Periplus of the Red Sea, and *Callianus* in the Digests is the same, as the one called by this name by Pliny, and had obtained it on account of its 'misty greyish or bluish colour, is more dubious, because the places where it is found, namely Kapadokia, Phrygia and Kataonia are too distant from India, than that it could be exported from the port *Barborikon*² at the Indus-mouths, as was the case according to the testimony of the Alexandrian Periegete.³ The last circumstance leads to the suspicion that in this case it was a kind of gem called Kallaís by Pliny because it was found in the lands north of the Indian Caucasus among the Dahd and Bactrians, and among the Sakd West of the Belurtag, and therefore could be exported from the Bactrian countries to the port at the mouths of the Indus. Accordingly it would have been the Turquois.⁴ If this determination may claim a high degree of probability for itself, then the ascertaining of the gem to be mentioned in the next place, which is in the Roman code of law called *Ceraunium* and by Pliny *Ceraunius*,

¹ Newbold's summary of the Geology of Southern India, *J.R.A.S.* IX. 73.

[² Schoff, pp. 37, 32, 126, 165, 270.—Trs.]

³ Pliny XXXVII 33, 1, and 56; p. 22.

⁴ *Plin.* XXXVII 33, 1 and 46, 2 with Note I in the ed. of *Delafosse* IV, p. 634. The words of Pliny are : *After turning away from India it is found among the Phycasi a nation of mount Caucasus, among the Saced and Dahd.* The position of the two last peoples is known, the first is quite unknown; it dwelt probably on the Belurtag. The Turquoises are known to come principally from the eastern Iranian countries. [Schoff, 38, 170, 223.—Trs.]

is subject to great difficulties, because he gives two different accounts without reconciling them to each other.¹ According to him this precious stone belonged to the white ones, was called *Astrios*, was found in India on the bank of the unidentified river *Pallene* and emitted from its centre like a star a brilliancy resembling that of the moon; some authors derived its name from its being opposite to the stars, withdrawing and returning to them their brilliancy. The best kind quite free from faults occurred in Karmania; some inferior ones were called *Craunious* and the lowest, found only in Persia, possessed merely the splendour of a lamp. In the second passage a single species is mentioned which is called *Ceraunias*, robbed the stars of their brilliancy, was like crystal and of sky-blue colour; it was found also in Karmania. Accordingly it must be left undecided whether we have to assume that only one, or three kinds of this gem existed, and of what kind the Indian one was.² It is most appropriately considered to be a kind of carbuncle, because such were known to the ancients in India, and because it cannot be supposed that the Romans caused a not very valuable precious stone to be brought from India.³ Although Pliny does not expressly say it, nevertheless, the manner in which he mentions the second gem of the species of the white ones, shows that he had seen it.⁴ It occupied the second rank among the white precious stones, and was especially distinguished by containing like the pupil, enclosed light, which, when kept in a straight line, it, so to say, pours out, and its rays move from one place to the other, but if it is kept in an

¹ *Plin.* XXXVII 47, 1; 48, 1, and 51, 1.

² *Salmasius* (l. q. w. p. 197 a. B.) assumes two kinds, although Pliny mentions three in one passage. According to the former the first kind is a crystal, the second a carbuncle.

³ The occurrence of carbuncles is shown by Pliny XXXVII, 25, 1. The name *Ceraunias* is Greek, namely from *charaunós* lightning, and means, possessing a splendour resembling lightning; the Greeks probably meant various kinds of gems by this general name. Also the name *Astrios*, i.e., small star, is Greek.

⁴ *Plin.* XXXVII 45, 1, with Note 1, in the ed. of Delafosse IX, p. 618.

inverted direction it reflects the white glimmering rays of the sun. On account of its resemblance to a star, it had received the name *Astrois* and is the kind of opal called by the French *Girasol* or *opale changeante*. It was difficult to use these opals in raised work, and the Indian ones were preferred to those of Karamania. Also the principal species of this kind had received a Greek name, namely *Paideros*, i.e., rouge, although as Pliny justly remarks, it is surprising that such a name was given to so valuable an object.¹

[With reference to the explanation of the names *sacondion*, *sacon* and *sagenon* proposed by Weber (Zarnek's literary central periodical 187 no. 857, page 90) by *saguna*, i.e., "good, endowed with good properties" I remark that this fits only the last name which designates the noble opal; but not the two first ones, which mean amethysts, and of which only my explanation through *Śakunāla* and *Śakuna*, i.e., "of happy omen" is tenable; according to Pliny the Indians called this precious stone *sacondion* and its colour *sacon*.] In it several properties coincided to import to it an extraordinary value. It possessed the transparent splendour of crystal, a touch of green colour, of the foam of wine and of saffron which was most remarkable; further the redness of purple which crowned it. All these colours occurred in it and no precious stone was more fit to fascinate the beholder by the lovely variety of its hues. The most esteemed stones of this kind came from India and were called *sagenon*, which can be but another form of the above explained *sacon*, in Sanskrit *Śakuna*.² Most probably on account of its play of colours the well-known noble opal must be understood by it.

If it was, in the preceding Indian gems, unavoidable to determine the signification of their names, the three following ones do not require it because their names are known. They are the *beryl*, the *sapphire* and the *emerald*, which the Periplus of the Red Sea as well as the Roman code of laws states to have

¹ *Plin. XXXVII 45, 1 and 2.*

² *Cf. p. 12.*

been exported from India. A chief place of finding beryls was in the vicinity of the town Pannatta in Limyrice, which is situated in the region of the present Bullari.¹ Most beryls came from India; from other places but few came.² The artists polished them all in vertical forms, because otherwise their brilliancy would be obscured and not reflected from the edges; and because if polished differently, they would lose their beautiful brilliancy. The most esteemed beryls were those which resembled the green colour of the sea; next to them in value were those, which were paler, were called chryso-beryls and the splendour whereof approached that of gold. A third kind possessed a still weaker brilliancy and was by some persons considered as a particular kind which they called chrysophrases. A fourth kind resembled hyacinth; the fifth was light-coloured; the sixth wax-coloured and the seventh oil-coloured. The commonest sort had fibres and a dirty brilliancy which it gradually lost, like most precious stones. The Indians estimated beryls extremely high on account of their length, and mentioned to their glory, that they were the only precious gems which they esteemed more than gold. Therefore, after perforating them, they tied them to the saddles of elephants. Other Indians however maintained the opinion that beryls were not to be perforated on account of their excellency, and preferred only to envelop their tops in golden caps; and to manufacture cylinders of the beryls which they carried in their seal-rings in preference to other gems. They suffered in common with emeralds from the fault of having a soft part and dark spots besides. Pliny had been informed that in the Roman empire, Indians used to visit Pontus and to palm off coloured crystals for genuine precious stones, but especially for beryls.

Pliny's accurate knowledge of these gems which he had not acquired from writings but from the carefully compared specimens of separate beryls, makes it almost certain that these formed at that time considerable articles of commerce between

¹ *Ptol.* VII, 1, 84.

² *Plin.* XXXVII, 28, 1, foll.

the Roman empire and India. The case was different with sapphires and emeralds. Plinius, in his data about them does not at all mention the Indian ones, whence it may be concluded, that India did not possess any very dear precious stones of these two kinds, or at least did not trade in them with the Romans, especially as the author of the Roman Natural History assigns to emeralds the rank next to diamonds and pearls.¹ He moreover supplies the two other sources from which we are obliged to derive our knowledge on the precious stones exported from the Indian countries. Thus the Romans received two kinds of Jasper; one resembled emeralds; the second dark-red purple, without possessing its splendour.² The Romans further obtained the precious stones called *Melichysi*, because the colour of gold was peculiar to them, which shines through pure honey. This gem is the honey-yellow topas. Lastly, the principal *chrysolites* came from India, but it must be surprising that according to the testimony of the Alexandrian Periegete they were imported into the haven of Barbarikon.³ They came probably from Æthiopia because its *chrysolites* are distinguished from the Indian ones; perhaps also from the Indian emporia.

Pliny mentions yet other Indian precious stones; but as it is not clear whether he described them according to the reports of other authors or had them before his eyes, the enumeration may be more suitably reserved for the following section of this book. Concerning the diamond, the most costly of all gems, it is certain from the report of the Alexandrian merchant and from the Roman code of laws that they were brought from India to the Roman Empire. Hereto it must be added that in ancient times India was the only country which possessed diamonds. Accordingly Pliny must have confounded these with spurious ones resembling them, when he asserts that besides the Indian ones, five other kinds of diamonds had

¹ *Plin.* XXXVII 15, 1. foll. 16, 1, foll. and 17, 1 foll.

² *Plin.* XXXVII 1, 45, 1. with Note 1. ed. of *Delafosse* IX, pp. 616 and 42, 1.

³ *Periplus, Mar. Erythr.* p. 22.

become known.¹ According to him a diamond was the most precious of all terrestrial things, and in ancient times even among kings but few could boast of having one. The largest known to Pliny were of the size of Avellanian kernels; since that time, as we know, considerably larger ones have been found. Besides the chief use in ornaments, diamonds served also lapidaries in their pursuits. Thereby they made use of pulverised diamonds, the powder whereof enclosed in iron could excavate the hardest stones. Pliny considers the discovery of the operation of reducing diamonds to a scarcely visible powder, as one of the most remarkable discoveries of the human mind: but he is mistaken when he asserts that diamonds can be crushed only when placed into fresh, warm blood of he-goats.

On account of the affinity of the use of pearls by opulent Romans in their ornaments, they may here be mentioned although they are a product of pearl-oysters. Since a very early time they enjoyed a high value in the eyes of orientals, and two of the companions of Alexander *Androthenes* and *Chares* testify, that in their time the Persians, Medes and other peoples of anterior Asia gave for pearls their weight in gold, and valued the ornaments fabricated of them higher than golden ones.² The Romans obtained many pearls, but especially from Taprobane on the coasts whereof the most productive oyster-banks were situated. Pliny assigns to them the rank next to diamonds, and says that among his countrymen pearls were as highly esteemed as *corals* among the Indians.³ He devotes to the description and to the use of pearls several chapters of the IXth book of his natural history and gives several examples of the extraordinary value, which rich Romans placed on the possession of beautiful pearls as well as of the scarcely credible extravagance carried on with them by the pomp-loving Romans. What he relates of the origin and fishing of pearls does not concern the

¹ *Plin.* XXXVII 19, 1 foll.

² II, p. 880, Note 1, passages quoted from them.

³ P. D. and *Plin.* IX 54, 1, foll. 59, 2; XXXII, 11, 1, and XXVII, 16, 1.

present but the next section of this book wherein the history of the Græco-Roman knowledge of India will be represented.

The advantages of the pearls consisted in their white colour, size, rotundity, smoothness and weight ; all qualities ascertainable with great difficulty so that scarcely ever pearls differing from each other could be found. On account of this similarity of the pearls with each other, the Romans called them by the name of *Unio*, i.e., unity, whilst the Greeks retained the word originating from the Indian *Mañjara* and changed by the barbarians to *Margarita*.¹ With reference to the white colour many differences occurred ; those from the Persian Gulf, where we know that in the islands of Dahsein also pearl-oysters are caught, were of a lighter colour ; the Indian ones were distinguished by possessing the scale-like brilliancy of transparent Selenita. Pearls, the colour whereof approached that of alum, were not praised. By neglect they lost their splendour. Pearls pointed upwards, oblong, and ending below in complete soundness were called *elenchi*, ear-rings, and were compared with the form of small vessels manufactured of alabaster. The Romans wore such pearls on their fingers, and two or even three in their ears, and had in their exuberant joy and consciousness of their opulence invented a special name for the jingling of the pearls, namely : *crotalia*,² because they greatly rejoiced at the jingling caused by the pearls in their ears dashing against each other. The desire for boasting of the possession of pearls had also descended to the Plebeians, and they asserted, that when their wives appeared in public, the pearls bore testimony to their rank, in the same way as lictors to that of consuls or magistrates. The principal Roman ladies went so far in their love of pomp that they fastened pearls not only to the thongs of their sandals, but entirely covered their shoes with them, and the custom had taken possession of them that they could not make their appearance in public without attracting attention by the jingling of pearls on their feet. Had Pliny

¹ Cf. I., p. 649, Note 2.

² The word is derived from the Greek *Chrotale* to jingle.

known that in India not only great ladies but even dancing girls wore golden anklets called *nūpura* which were inlaid with precious stones, he would not have failed to give vent to his feelings concerning the degeneration of the Romans, especially as he praises the simplicity of ancient Roman morals. On the other hand he communicates some very remarkable examples of the almost incredible extravagance in pearls, and of their great quantity. *Lolla*, the daughter of *M. Lollius*, wife of the Emperor *Caius Claudius*, showed herself not only at great festivals but at the betrothals of unimportant men entirely covered with emeralds and pearls, which shone together and covered the whole head, the hair, the plaitings of the hair, the ears, the neck, the necklace and the fingers. She showed by calculations which she submitted that they had cost 40,000,000 sesterii or about 2,026,000 dollars. These pearls had not been presented to her by her extravagant imperial husband, but her father had robbed the kings of the east of this treasure. Thereby he drew upon himself the displeasure of the emperor and committed suicide by poison and thus punished himself for the wrong he had done. The second example is still more remarkable; *Cleopatra*, the notorious queen of Egypt, possessed two great pearls which had become celebrated throughout the world, had formerly belonged to other eastern potentates, and had at last come into her possession. She wore them as ear-rings, challenged her beloved paramour *Antonius* to outdo her in pomp and made on this subject a bet with him. At the repast arranged for this purpose she caused a second table to be brought in whereon but one vessel was standing which was filled with vinegar strong enough to dissolve pearls. *Cleopatra* threw one of her two ear-rings into it and then swallowed the vinegar with the dissolved pearl, *Antonius* was declared vanquished because the value of the table was estimated to amount to 10,000,000 sesterii or 543,444 dollars. Herefrom it is evident what an enormous value was attributed to pearls. *Cleopatra* was stopped by a follower of *Antonius*, from causing the second ear-ring to undergo the same fate. After the conquest

of Alexandria pearls had become very common in Rome, they having come to Rome first during the Augustine war. At the time of Pliny pearls were no doubt imported from *Perimula* or *Perimuda*, a sea-port of the island of Manaar* on the North-coast of Taprobane,† to Alexandria and—brought to Rome, because according to his testimony a celebrated emporium was there; and according to *Ailianos* the fishing of pearl-oysters was zealously carried on there.¹

The second division of the wares imported from India into the countries subject to the Romans consists of products of the vegetable kingdom, either in their natural or in their artificial state ennobled by industry or art. As these goods were partly applicable in medicine, in their description also, two of the four genuine writings of *Dioskorides* may be used, who had lived before Pliny.² The title of the first is : *Gerí êtriches mîes* and treats of the remedies ; and the title of the second is : *Gerí eûporiston árqaon te chat sunuêton tharmáchon* and contains, as the title implies, an indication of the easily prepareable and of the readymade remedies. Besides these writings yet those of *Klandios-Galenos*, who was after *Hippokrates* the greatest of Greek physicians, are to be consulted. He was born in 131 A.C. and attained a very high age because he was yet alive during the reign of *Alexander Severus* from 222 till 234 A.C. exactly the year of his death cannot be ascertained. He has left a considerable number of writings, the enumeration whereof would here not be in the proper place. In the enumeration of the articles of exportation hereto pertaining, I shall follow the same order as before when I treated of the products of the vegetable world in anterior-India, in Further India and in the Indian archipelago.⁴

¹ *Plin.* VI, 23, 2 and IX, 54, 1, and *Ailianos De. Nat. Anim XI*, 8.

² See the ed. of Kurt Sprengel I, p. IX.

³ Cf. the ed. of C. G. Kuhn I., p. XXI, foll.

⁴ (Cf. the ed. of Kurt Sprengel) I, p. 244 foll., p. 339 foll and p. 349 foll.

According to the Periplus of the Red Sea *rice* was exported from Barygaza and the interior adjoining it, to *Opone*, on the African coast.¹ As at that time the cultivation of this important, and afterwards so much propagated cereal had not reached farther west than to Bactria, Susiana and to the Euphrates,² the Greek merchants brought rice principally from India. On the other hand *wheat* was but seldom exported from the just mentioned part to Ethiopia as the author of the above work states, but at the same time remarks that the Greek ships sailing to *Nelkynda* or *Nilesvara* on the Malabar-Coast carried as much wheat as sufficed for the crew during the voyage. Another Indian cereal *Milium* was not exported from India it is true; but on the other hand its cultivation was introduced into Italy ten years before Pliny wrote this passage.³ It is probably the kind of millet very common in India, which botanists call *Holcus Sorghum* and the Indians *guari* or *gawar* in the vernacular.

The *tila* oil, so called from the *tila* the plant *Sesamum Indicum* from which it is obtained, and used in India, forms one of the most important articles brought from that country to Rome. The *Sesamum* plant was well known to the author of the Roman Natural History, and the oil was also utilised for medicines.⁴ It may also be remarked on this occasion, that at the time of Pliny the Romans caused garlands plaited from *roses* to be imported from India and from still more distant countries, to use them at festivals.⁵ As they themselves possessed roses, this can have happened only because they attributed to these flowers a higher value, the greater the distance from which they came.

¹ see p. 9.

² I, p. 245.

³ *Peripl. Mar. Erythr.*, p. 32.

⁴ *Plin.* XVIII, 10, with the notes in the ed. of *Delafosse* VI, p. 195, and p. 201, and then above I, p. 247, Not 3.

⁵ *Plin.* XIII, 2, 7; XV, 9, 1, XVII, 10, 1; 3, 7 and 8; XVIII, 22, 8; 23, 2, then XXII 64, foll. where the remedies prepared from it are indicated. See also *Dióskorides De Nat. Med.* I, 41 and II, 121.

⁶ *Ibid* XXI, 8, 1.

In order properly to understand the data on *cotton* and *cotton-clothes* occurring in the Periplus of the Red Sea and in the Roman code of laws, first of all the significations of the words used in these two books must be fixed. The author of the first work makes use of the Indian word *chárpasos* or *Kārpāsa*; the clothes weaved of the cotton he calls, according to the precedent of *Herodotus* the oldest Greek author who mentioned them, *sindónes* which name, it is true, strictly only means Indian but had already before been applied to one of the most valuable and most propagated Indian products.¹ He must have meant by it the usual kind of cotton-clothes, because he calls the finer clothes of this kind *ōdōnion* and *ōdōne*, which were used already by *Homeros* for white fine linen-clothes and for female garments prepared from it.² He calls a third kind *molōchinai* which expression properly means a coarser kind of cotton-cloth.³ Of the usual kinds of cotton-cloth, many varieties were exported, especially from *Tagara* in the vicinity of the present Kalberga; the principal ones came from the regions on the Ganges and were therefore called *Gangetic*.⁴ Accordingly the *Ebargiritic* ones exported from the interior called *Argali* near the Argalish gulf, the present Palk road, must have received their name from a district of those parts called *Ebargiri*.⁵ Of the finer cotton-clothes the author distinguishes three kinds; the first, which he calls *plūtúteron*, i.e., the very broad, or rather very strong one, is by a special name called *monaché*, which designates something particular in its kind, and must therefore be understood of the finest cotton-clothes.⁶ The second sort is called *chudaion*

¹ *Peripl. Mar. Erythr.*, p. 5, p. 28, p. 29 and p. 36 and II, p. 654.

² *Peripl. Mar. Erythr.*, p. 9, p. 13, p. 15, p. 22, p. 25 and p. 29. In *Homeros* occurs e.g., K. V. 141, and *od.* VII, 107.

³ Vincent l. q. w. II, p. 741, *Moláche* which word is less correctly spelt *molóche* and means the *Malve* which is represented as the food of poorer people, therefore the word has in this case probably been transferred to the cotton-clothes used by poor people.

⁴ *Peripl. Mar. Erythr.*, p. 29 and p. 36.

⁵ *Ibid.*, p. 34.

⁶ *Ibid.*, p. 9, pp. 28 and 29 and Vincent l. q. w. II, p. 749.

or slight, the third *sagmatúginon*, or more correctly *sagmatogíne* which was used for stuffing cushions, beds, and similar things, and which must therefore be considered as the worst kind. Besides also cotton-yarn of the sort called *molochinon* came into commerce by the side of the usual cotton yarn called *néma Indichón*.

Much more important are the data of the Roman code of laws, concerning the cotton and the cotton-clothes imported into the Roman empire. In it *Capsium* probably designates cotton-yarn, *carbasia* on the other hand cotton-clothes. An investigation on the use of cotton itself and of the clothes made thereof is beyond the scope of this work, and therefore I may confine myself to a few remarks on them. The first is that the first occasion of the use of cotton among Greeks is uncertain; the second is that it is frequently dubious whether the expressions used by Greek or by Latin authors really designate cotton, or other clothes related to them. This applies, viz., to *Bússos* and *bysus* by which name also clothes manufactured of linen-cloth and of a Greek plant are meant. The same remark applies also to the name *carpasus* which has by Roman authors likewise been applied to other than to cotton-clothes.¹ Accordingly only the name *sindón* remains a reliable witness for the use of cotton-cloth among the classic peoples. Thirdly as far as the propagation of the *gossypium herbaceum* the tree which produces the cotton, is concerned, it is uncertain whether it has positively been planted in upper Egypt at the time of Pliny, and as otherwise only the plantations of this tree on the quite small islands *Tylos* and *Arados* in the Persian Gulf are spoken of during this older time,² anterior India remains the only country from which the cotton clothes could be brought to the subjects of the Roman emperors. [The explanation of the Greek word or cotton is to be modified as follows: It has originated from

¹ Cf. I, p. 250, Note 2, and especially Plin. XIX, 16, 1.

² Cf. I, p. 250, Note 2 and the passages there adduced from *Theophrastos* and *Pliny*. The latter author remarks XII, 21, 1, that the trees growing on *Tylos* and *Arados* are called *gossymphinos*.

the Egyptian word *shenti* which meant in the first instance the Egyptian apron and then articles of garments manufactured from the varieties of *gossypium* growing in Egypt. If hereby the Egyptian origin of the expression cannot be denied, this circumstance does not sufficiently explain its transformation occurring in *Herodotus*, the oldest authority. Accordingly I suppose he found in *Babylon* a similar name for Indian cotton and appropriated this form of the word which afterwards superseded the other. As the Babylonians no doubt obtained the Indian cotton, the name *Sindhu* which not only means the river but also the country through which it flows, may by them have been applied to designate cotton. Accordingly I do not hesitate to assert that in this form *ddône* is of Indian origin.]

Although *silk* is not the product of a plant but of an animal, but principally of a non-Indian one and of Chinese silk-worms, it may nevertheless be considered on this occasion because also silk manufactured in India, and silk clothes made there, were carried to the Romans by commerce. The usual name for silk, namely *serikôn* and *serium* is not a geographical one, but are given by merchants. is the country, from which they brought the silk wares to the western peoples.¹

This conception of the expression seems certain because in the Roman code of laws *sericum indicum* is adduced as a merchandise. By the words *nema sericum* in the digests as well as in the *Periplus* of the Red Sea spun silk is designated; by the word *Serichá* the author of the latter writing must have meant silken stuffs. The corrupted passage in the digests wherein several kinds of silk-clothes are mentioned, may be most appropriately amended as follows: *Chelone Aethiopia vel Indica Serica metaxa vestis Serica vel Subserica vel tincta.*"²

¹ Cf. I, p. 321, Note 2, and II, p. 594.

² The reading of *Spangenberg's* edition, page 181, has the following: *Chelymnia Aethiopia Indica vel adserta, metaxa vestis Serica vel Subserica.* The first

If these corrections be accepted then we obtain *Serica* for silk-clothes, *Metaxa* for raw silk, and *vestis Serica* for garments made entirely of silk, whilst *Subserica* must have been half-silken clothes. This appears from the circumstance that *holoserica* and *subserica* are distinguished ; the latter are suit-clothes as are made of another cloth but have a silk-woof. Besides these dyed clothes also came from India across Alexandria to the Roman empire. If to these wares yet *Nema-serium* be added for silken yarn, then the Romans received raw-silk as well as silk-yarn, as also all-silk and half silken clothes across Alexandria.

Previous to the reign of Justinian in the second half of the sixth century, silk-cultivation had been introduced into the Byzantine empire.¹ India necessarily remained the principal mart for silk with the western countries, especially as the commerce by land with India, was, in many ways, obstructed by the Parthians, as has been already shown above.² Shortly before this, silk was yet exported across India from China but especially from the Indian ports to Persia, to the country of the Homerites in Arabia Felix, and to Adule in Ethiopia.³ From the manner in which Aristotle mentions

emendation belongs to Salmasius l. q. w. p. 887 6, E, who also proposes *Chelone* instead of *Chelynine*, the 2ND, Vincent l. q. w. 11, p. 765. The first emendation is confirmed by the following passages of the ancients. According to *Strabo* XVI, 4, 14, p. 773, the *Chelonophagoi*, i.e., tortoise-eaters, lived on the Ethiopian coast, and according to *Peripl. Mar. Erythr.*, p. 7, the principal tortoises were there. Pliny mentions XXXVII, 96, 3 and 4, two kinds of precious stones, which were called *Chelodonæ* ; it is the first which must be considered as the Ethiopian one. This one had the colour of swallows and the rear was purple red with intervening black points. The second kind *Chelonia* was the eye of the Indian tortoise. As *vel tinota* approaches the traditional reading more than *at tinota* I prefer this emendation to that of Vincent. The objection made by him that *Metaxa* and *Nema Sericum* are usually used of the same thing, falls to the ground by *Metaxa* being usually placed for raw silk. Lastly it will be more correct to conceive *Serica* not as a general superscription, but as elsewhere in the sense of silk stuffs.

¹See on this event the passages adduced above I, p. 322, Note 1.

²See above p. 2.

³*Kosmas*, v. 337. C.

Bóuboz by which word the Greeks designate the silk-worm and the silk itself,¹ it may be concluded that the mulberry-tree *bombyx mori* had become known to him, but that he possessed no knowledge of the insect itself or of the worm, and that in his time but few Greek women made use of silk. Nevertheless, already cocoons were brought to Greece and worked to yarn; then the silk was used for fine clothes, but first on the island *Kos*. The matter had formed itself quite differently since the beginning of the time of the Roman Emperors; since that time the use of silk made considerable progress, whilst the increase of the knowledge of the manner in which silk is obtained, did not keep equal pace with them.

Not only Virgil but also Pliny was under the erroneous impression that the silk was combed down from the leaves of the trees.² He had repeated the report of Aristotle only in an extract and the obscurity of his words had given currency to the long reputed error, that the Roman women first dissolved the textures brought from Asia and then weaved them anew. The only Classic author who showed a more accurate acquaintance with silk goods and with the proceedings of the Serians to feed silk-worms and to obtain the silk from cocoons, is *Pausanias* who composed his well-known work about 100 A.C.³ He is, however, mistaken when he says that the Greeks call the silk-worm *Térbut*, the Serians differently, because *Ser* has originated from the Chinese *see* or *szu* with omitted *r*.⁴ Also his geographical reports concerning the land of the Serians are incorrect and partly confused. According to him the island *Seria* was situated in the innermost corner of the Erythraean sea, on the river *Ser*. *Pausanias* considers the Serians as belonging to the race of the Ethiopians, as well as the inhabitants of the two

¹ *De histor. animal*, V, 19.

² See Virgil's *Georg.* II, 21 and Pliny's *H. N.* VI, 20, 2, and 24, 8 and XI, 26, 1. The words of the first passage are quoted I, p. 350, Note 2.

³ VI, 26, 4.

⁴ See I, p. 321, Note 2.

adjoining islands *Abasa* and *Sakaia*; others on the contrary considered these peoples as Scythians who were mixed with the Indians. In this report evidently various narratives of the Greek merchants are bundled up about that distant country. The identification of the Serd and of the Ethiopians probably belongs to the ancient Homeric idea that the latter nation inhabited the outermost frontiers of the earth;¹ also the name *Erythraish* has been erroneously applied to the Easternmost sea. The river *Ser* is probably no other than the *Seros* of Ptolemy, of which it will be shown that it is the Kamboja-river. As at the time of this geographer *Kattigara* or *Canton* was the principal emporium of China, and in the vicinity of this town a Brahmanic colony existed in *Bramma*,² and as further silk was from thence brought to the Romans and from inner Asia throughout the regions of the Serd and the Sæd, which latter one could easily have been designated as a Scythian nation, it is satisfactorily explained how in the above passage of Pausanias such different persons, living so far from each other, can have been thrown together by this author who was so little familiar with the geography of Eastern Asia. It is scarcely necessary expressly to mention that the statement, that there is yet an island *Sakaia*, is entirely confounded; the island *Seria* on the other hand might be one of the small isles at the mouth of the Canton-river, on one of which Macao is situated.³

In judging of the reports of the Classic writers on the use of silk clothes among the Greeks and Romans, the difficulty occurs whether the Asiatic, i.e., Chinese silk, or indigenous clothes related to silk are meant; for, in India there are at least twelve kinds of silk-spinning worms, and among the kinds of silk obtained from their textures, there are two, i.e., those called *Tusser* and *Erauda*; the one is in

¹ See I, p. 390.

² See III, p. 7.

³ The island *Abasa* is perhaps called *Abasta* because there is a river *Ambastes* and a nation called *Ambastai*; cf. page 7.

common use; the second on the other hand is of unusual duration; as besides, the Indians had already used their indigenous kinds of silk for the manufacture of fine clothes¹ there can scarcely be a doubt that the inhabitants of the Roman empire obtained silk and silk-stuffs also from India. On the island *Kos* there was a particular variety of caterpillars which lived on cypresses, terebin tree, asp-trees and oaks, of the textures whereof a yarn employed for weaving was spun.² These fabrics were distinguished by their thinness and lightness, and also men were not shy to wear during summer clothes manufactured from them. As clothes of this kind are also called *bombyasia*, like those made of Chinese and Indian silk, a doubt arises which of the two kinds we have to understand by them. It is true, from the tolerably frequent contrast of *Serica* and *bombyasia* it may be supposed that the first name designated Asiatic silken stuffs and garments, and *bombyasia* on the contrary, the European ones.³ This idiom is however by no means fixed. The most celebrated Greek silk-spinneries were on the islands *Kos*, *Amorgos* and some others; the most celebrated among the Roman ones were those in the Etruscan village *Tuskus*. These manufactories furnished the thin gauze-like textures, which were worn not only by women but also by men, inspite of the royal prohibition.⁴ The Roman authors who still adhered to the strict morals of their ancestors, often manifest their amazement on the wanton silk dresses of Roman women, which scarcely hindered the colour of the skin to appear through them, so that they seemed to be almost naked.⁵ Roman females in general carried the luxury

¹ Cf. I, p. 317, foll.

² *Pliny* XI, 28, 1, and 2. Cavier remarks in note 1 of Ajasson's edition IV, p. 133. that since the introduction of the silk-worm into the Byzantine empire these caterpillars have fallen into oblivion.

³ Cf. e.g. *Clemens Paedagog* II, 10, *ulp. Dig.* XXXIV 2, 23, 1 and *Panlos Sent.* III. 7.

⁴ *Zuñtilanus* II, 10, p. 649. *Spanti*.

⁵ Cf. e.g. *Horatius Sat.* 1, 2. 101. *Pliny* VI, 20, 2, who expresses himself as follows: *So that in public the matron shines through.*

of silk dresses to the greatest extremity ; thus for instance, they wore with the Seric costume also garlands of the mere leaves of the Narde or of variegated flowers which were moistened with salve.¹ In this respect men did not yield to women, and wore not only Seric clothes, but used this fabric also for pillow-cases, carriage covers, and similar things. Lastly as far as the value of the silk is concerned, at the time of the Emperor *Aurelianus* a pound of silk was worth as much as a pound of gold.²

In the next place two plants must be mentioned which belonged to the genus of reeds, although they served the Indians for various purposes. The first is the *Bamboo*-reed, of which Pliny reports that he has frequently seen it in temples.³ His exact description of these reeds and his data on the use which the Indians make of this highly useful plant, will be reserved for the next section of this book. The next reed is the *sugar-cane*. According to the testimony of the Alexandrian Periegete it was called *Sách Charí* which he calls a kind of honey.⁴ The name is to be considered as a Parkrit-form of the Sanskrit-word *sarkara*, which means also sugar in grains.⁵ From this the *Saccharon* is to be distinguished, which is the *Tabashir* contained in the bamboo-reeds, is used as a medicine and was also called *Śarkarā*.⁶ That most-praised came from India. As a remedy also *Boùloron* will have to be regarded, of which the Alexandrian merchant relates, that the region round *Barygaza* is fertile in it, and that it was exported thence.⁷ It is clear that in the present case the word cannot have the usual meaning of butter, which is not used in India, and can besides not be designated as a product of the vegetable world. Accordingly by it most suitably *Assafoetida* may be understood,

¹ Cf. Plin. XXI 8, 1, where he adds : *this is the latest fashion of female luxury*.

² *Vopiscus* in the biography of this emperor, 13.

³ Plin. XVII, 65, 3 and 4.

⁴ *Peripl. Mar. Erythr.*, p. 9.

⁵ Cf. I., p. 270, Note 2.

⁶ Pliny XII, 7, 1, and *Dioskorides*, then *De mat.* II, 104, with note, p. 273.

⁷ *Peripl. Mar. Erythr.*, p. 9. and p. 24.

which is obtained from *Ferula foetida*, and is in Sanskrit also called *Bhūtāri* which name the Greek merchant could easily change to *butyron*. A confirmation of this explanation follows from the circumstance that *Assafetida* is exported from the adjoining Sind.¹ A third medicine which the Romans obtained from India is that called *lukion* or *lycium*, which is probably prepared from the *Mimosa catechu*, although this special kind of tree has not yet been fixed with due reliability.² A fourth remedy was called *máchar* or *macir* and was the reddish bark of the great roots of the trees of the same name, which grow in India, but were not known to Pliny.³ This bark belonged probably to a tree yet growing on the Malabar-coast, which is large and called *maire* by the Brahmans of those parts, the bark whereof is highly esteemed, but the tree has not yet been accurately identified.⁴ As far as the name is concerned, it is probably to be explained from the Sanskrit word *Makura*, which means also one of the treasures of *Kuvera* the God of riches, especially as the Brahmans in Malabar consider its flowers as sacred ones. Its root was principally used against dysentery. Lastly, as a medicine one has to consider *saffron* which was according to the *Periplus of the Red Sea* exported from *Barygaza*, because this product of the vegetable world was by the Classical nations used only as a medicine, and was esteemed only additionally on account of its perfume. According to the prescriptions of the Greek-Roman physicians *saffron* constituted an ingredient of remedies against a tolerably great number of diseases, the enumeration of which must here

¹ *Ritter's Asien* IV, 2, p. 965.

² Cf. Pliny XXIV, 77, 1 foll. where a description of the preparation of this remedy and its effects are communicated and Kurt Sprengel's note to *Dioskorides* I, p. 405.

³ Pliny XII, 1, 16, 1; *Dioskorides De mat. med.*, I, p. 110 and *Galenos De simpl. medier. ten.* VIII.

⁴ Kurt Sprengel's Note in his ed. II, p. 390, foll. According to Desfontaine in his excuse to Pliny V., p. 114, foll., the just cited German scholar had asserted that the skin which envelops the aromatic seed of the Muskat nut is meant. He on the contrary rejects this opinion. Hereto it must also be added that the ancients called the muskat-nut-tree *caryophyllon*.

be omitted. As the Romans obtained *saffron* especially from Kyrene, Lykia, Sicily and other countries, but received it only exceptionally from India, I need not here enter extensively into the subject.

It may be mentioned on this occasion that from *Barygaza* also mahogany and beams were exported.¹ According to the reports which had reached the author of the Roman Natural History, mahogany-trees were spread far over India. By the beams probably such as were made of Teak-trees may be understood, because their wood distinguished itself by its great duration.²

The next place may be assigned to the *colouring-substances* which were used partly by weavers and partly by painters. According to the testimony of the Alexandrian merchant cotton-clothes dyed with lac-colour were exported from India; he knows already the present name of this colour.³ He further relates that *Indichô melan* or *Indigo* formed an article of export from India, on which the author of the Roman Natural History gives us closer information.⁴ According to him there existed two kinds of this colour, the present name whereof still bears testimony to its Indian origin; only the second does not answer to the present dying stuff and is represented to consist of the leaves, the branches and the stems of the *Innigofera tinctoria* brought to fermentation in water.⁵ The foam floating on the vessels in the workshops of the purple-dyers was on account of its beautiful purple-colour named *Indicus Purpurismus* and used by painters.⁶ The genuine colour of this kind was examined by burning; if the matter burned

¹ *Peripl. Mar. Erythr.*, p. 20 and *Pliny* XII, 8, 1, and 9, 1.

² *Cf.* I, p. 252.

³ *Peripl. Mar. Erythr.*, p. 6. where this colour is called *lakkos*.

This name answers to the form *lakka* of the vulgar-languages and is based on the Sanskrit-form *lākṣā*, which is disfigured from *rākṣā*. This is to be derived from the root *raṅg* to dye; *cf.* I, p. 316, Note 3.

⁴ *Peripl. Mar. Erythr.*, p. 18 and *Pliny* XXXV, 27, see also *Dioskorides* V, 107.

⁵ *See* I, p. 277.

⁶ *Pliny* XXXV, 12.

it showed the colour of the most excellent purple and its smoke emitted a smell. Some sellers of this colour adulterated it by colouring with the genuine indigo also excrements of pigeons or chalk from the town *Selinus* in Sicily, or by mixing glass with the chalk of the glass-pearls of common sealing rings, one pound of genuine indigo cost ten dinars or nearly two dollars, and was also used in medicine as sedative remedy. The second kind of this dying stuff was drawn from the loam adhering to the reeds, and when rubbed up became black, and on the contrary if dissolved in water it gave out a wonderful dark-blue colour. This colour is now no longer known. To both these kinds of dying stuffs a great preference was given.

The objects to be considered next are two *resins*, namely *amber* and *cinnabar*; it is true the first was no object of commerce, but may here be mentioned, because its mention shows, that commercial-intercourse between *Cappadocia* and India was a usual one in the beginning of our era.¹ *Archelaos* who governed Cappadocia as a Roman province under the Emperor Tiberius had caused amber to be brought from India which adhered to the bark of a Fir tree, had a coarse surface, and if worked in milk-victuals attracted their fat to itself. From the circumstance that ants, lizards and plants could be seen spinning through this amber, it may be seen that it originally existed in a fluid state and that at that time they had become pasted into it. As according to more recent researches fossil amber is an indurated rosin containing insects and other objects, and occurs in a good many countries, nothing can be said against the above narrative.

Cinnabar is neither the pus mixed with blood of dragons nor is its name Indian,² because this stuff, called in the sacred language of the Brahmans *raktapārada* or *rasasindūra* though also called dragon-blood, is nevertheless only the red sap dropping from the *Ptereocarpus Dracs* or *Ptereocarpus*

¹ Pliny, XXXVII.

² What Pliny maintains XXXIII, 38, 1.

Santalini.¹ The cinnabar was also obtained on the island *Dioskorida*, now called Din Sokotora, and as the Alexandrian merchant correctly observes, from juices flowing out of trees like tears.² Among the Romans cinnabar had found a tolerably wide application.³ It was used as colour by painters and especially esteemed on account of its beautiful colour.⁴ It was further mixed up with the salves and served in medicine as antidote of poisons. In the use of cinnabar in medicine the abuse became common to add mountain-cinnabar to the Indian cinnabar.⁵

Now we attain the two divisions of goods, which must be considered as the most important of those by which India mostly promoted the extravagant love of pomp of the rich and luxurious Romans; namely the *spices* and *perfumes*. At that time pepper was an exclusively Indian product and could be brought to the Romans only from its native country, the Malabar-coast.⁶ Pepper like some other spices, and several perfumes are in the Roman code of laws called *species* which word is conceived in its special meaning of *spices*, an idiom

¹ Cf. note 6 of *Delafosse* in his ed. VI, p. 38. The name is rather of Semitic origin, because the first part of it Kinna is preserved in Kinna-momon, the name of which is, according to the testimony of *Herodotos*, certainly Phœnician; cf. I, p. 280, Note 2. The meaning of the whole name is not yet explained.

² *Peripl. Mar. Erythr.*, p. 18, Note 2.

³ Cf. II, p. 580.

⁴ Pliny XXXIII 38, 1; XXXVII, 39, 1, and XXXV, 12, 2; further *Dioskorides De mat. med.* V, 109. and *Galenos De simp. medic.* X 19.

⁵ Pliny XXIX 8 and 8 [a plausible explanation of *kinnabari*, the Greek name for cinnabar, is that proposed by A. Weber (l. q. w.) by *chhinnavāri*, i. e. fracture—water, because in the *Periplus of the Red Sea* I, p. 281 in C. Muller's Ed. of the *Geogr. Græc. Minores* it is said: *kinnabani*, to *Legómenon* 'Indikōnāpō' etc., and Pliny expressly testifies that the name cinnabar is of Indian origin. It only raises a difficulty here that *chh* is rendered by which is otherwise represented by *s*, as e.g. in *Sandorkyptos-Chandragupta*, *Sandrabatis-Chandraviti*. Therefore I prefer to explain the first part from *kīna* the Prakrit form of *kīṇa*, i. e. "thin water contracting itself".

⁶ See I, p. 278.

of which examples occur in later literature,¹ and from which in the Romaic languages the Spanish *espeierias*, the Italian *speziorie* and the French *épicerie* were formed ; from the second the German language has taken the expression. In the Roman code of laws *piper longum* designates the black and *piper album* the white pepper which is only the split black one. The chief marts for commerce with pepper were *Muziris* or *Mangalor* and *Nelkynda* the present Nileśvara, which was frequented by many ships on account of the excellence and the quantity of pepper.² To the second port alone the kind of pepper was brought which obtained the name *kottonarinon* because it richly flourished there, or perhaps more correctly at *Kottonara* in the vicinity of this emporium. The most suitable explanation of this name might be the circumstance that the so-called pepper came from the region of *kadutinada* because the pepper grows there³ and because by pronouncing the name *kadutinara* the Greek form could easily originate. The taste for pepper had at the time when Pliny wrote his rich work, attained an incredible height among the Romans ; it was bought for its own weight in gold and silver, though Pliny could not master his astonishment at the idea that a berry distinguished only by its pungency should be so much coveted whilst other plants were sought on account of their sweetness or form.⁴ At that time already a pound of white pepper cost seven denari or more than 2 Thlr. 7 Gr., a pound of the black on the contrary, only about 23 Gr. The Romans used pepper principally like ourselves to impart zest to their victuals ;⁵ it was however also used in medicine. It had become known already to *Hippokrates*, the oldest Greek physician ; no doubt through the Phoenicians, and was afterwards used for medicines ; more seldom the

¹ Salmasius l. q. w. p. 739 a, C. and p. 765, a. c.

² *Peripl. Mar. Erythr.*, pp. 31 and 32.

³ *Francis Buchanan, A Journey through Mysore*, pp. 506 and 510
Pliny calls VI, 26, 10 this region Cottonara.

⁴ XII, 14, 3 and 4.

⁵ *Plin.* XIX, 62, 1 and XXXIII, 27, 1.

piperitis, probably the pepper-herb.¹ Accordingly whilst there can be no doubt about the home of pepper, on the other hand only Ethiopia vies with India for the preference of having produced two other very costly objects of Roman-Indian commerce. They are the *Kassia* and the *Kinnamomon*. As I have treated of these two plants ² before, I can in general refer to the previous treatment of this object, and I need here only mention the chief points, and to use such authors as flourished during the period of time now under consideration. The remark may be made that *Pliny* confirms the view that Arabia Felix produces neither *Kassia* nor *Kinnamomon*.³ Of both plants there existed various kinds.⁴ The most excellent *kassia* and the most excellent *kinnamomon* come from the port *Mosyllon* on the Ethiopian coast; accordingly the first has received the name *mósulon* and the second of *mosulites*. A commoner sort of *Kinnamomon*, was called *feudachinnamómon*; a coarser *kassia feudachassía*.⁵

Kylokinnamomon was remarkable on account of its being wood-like, having coarser rushes and less perfume. The *Kylo-kassia* of the ancients is lastly the produce of the Cinnamon-tree growing wild in India, and resembles genuine cinnamon, in smell and taste, but is coarser than it.⁶ As far as India is concerned it may here suffice to mention, that according to the testimony of *Strabon* *Kinonamomon* was at Rome in southern India, and that to Arabia Felix Rore *Kassia* was brought from India than from Ethiopia.⁷

¹ *Hippokrates*, *De morb. mul.*, II, p. 656, ed. Kuhn; *Plin.* XX, 66, 1; XX, 111, 3 and *Dioskorides* *De med. simpl. temper.* II, 88. *Galenos* also mentions pepper as a medicine in several places, which need however not be mentioned here.

² See I, p. 279, foll. and II, pp. 55 and 561.

³ XII, 41, 1.

⁴ *Dioskorides*, *De mat. med.* I, 12 and 13, and *Galenos*, *De antid.* 12, 14, 1, 257, ed. Kuhn. According to the *Peripl. Mar. Erythr.*, p. 7, from the emporia of those parts great quantities of *kassia* were exported. *Pliny* XII, 42, 2, bears testimony that cinnamomum grows in Ethiopia.

⁵ *Strabon* XVI, 4, 14, p. 774.

⁶ Cf. I, p. 281.

⁷ XV, 422, p. 695, and XVI, 4, 25, p. 785.

From this elucidation it is clear, that in the mention of the use and price of the two above plants it must be left undecided whether we are by them to understand Indian or Ethiopian ones. The most complete list of these two wares occurs in the Roman code of laws in which we find : *Cinnamomon*, *Kylocinnamomon*, *Cassia tantum* or according to another version *rhumfama*, i.e. used as perfume, and *Kylocanium*. The chief use of these goods was the medical one, of which to communicate the rules of Salenos and of Dioskorides, this would be the improper place ; on the other hand it seems suitable to indicate their prices, because from them it appears what a high value these products of the Ethiopian and Indian soil possessed in the eyes of the Romans.¹ The price of the Kinna-momon was very high, since one pound of it cost 25 denarii or about 4 Thlr. 23 Gr. which rose as far as 300 denarii or 53 Thlr. Also the price of Kassia changed greatly because for a pound of the best sort 50 denarii or about 9½ Thlr. and for one of commonest on the other hand, only 5 denarii or 1 Thlr. was paid. The *kylocinnamomon* was four times as dear as Kassia.

If in the two preceding plants their country could be doubted, in the following two there is no doubt at all. Firstly the *kardamums* which were used also in medicine.² Of the principal sort one pound cost 10 denarii or about 2 Thlr. 8 Gr. Secondly *Cloves*, which were by the ancients called by a Greek or perhaps only graecicized name *karuóphullon*, belong exclusively to the Moluccas. The Romans esteemed them principally for their smell.³ The third

¹ *Pliny* XIII, 2, 8 ; XII, 43, 2, and XII, 42, 5.

² *D. Pliny* XII, 29, 1, where it is, however, erroneously stated that a kind of *kardamums* grows in Arabia, as they occur besides in anterior India only in Siam and Kamboja ; cf. I, p. 281 ; further *Galenos*, *De. simpl. med. temper.* XII, 19, and *De compos. medic.* XIII, p. 337, ed. Kuhn.

³ *D. and P.* XII, 15, 1, where the name is correctly written *garyophyllon* *Karuóphullon* means the leaf of the nut-tree, especially of the walnut-tree ; perhaps the Indians called the clove *karukaphulla* which may designate the flower of the granate-apple-tree, and may have been applied to designate the spice,

spice here to be mentioned, namely *zingibar* or *ginger* was brought to the ancients not only from India, but also from Ethiopia whence the best sort came. It was used as a medicine, and a pound of it cost four denarii or a little more than 22 Gr.¹ For medical purposes also the *Calamus odoratus*, which likewise grows in India, and is not to be confounded with the Syrian one, was used.²

A much more extensive application was enjoyed, by the *Malabathron* or *tama'apatra* of the Indians, which consisted of the leaves of the *Kassia* and of other laurels, and the most esteemed of which was carried to the Romans.³ On the manner of obtaining it the author of the *Periplus of the Red Sea* gives a tolerably accurate report, which is hereto communicated and explained. Annually the savage nation of the *Sesatai*, more correctly called *Besolai* by Ptolemy, the individuals whereof were of short stature, broad faces and blunt noses, migrated to the frontiers of the *Thinai*. They were followed by their wives and children, wore bundles plaited of rushes and carried leaves of creepers with themselves. During the festival they used their bundles as couches, and after the termination of it they returned to their families. After their departure, persons who had observed their doings, visited

with the origin whereof they were but little familiar. The Greeks were fond of giving to foreign words a familiar turn. [To my explanation of the Greek name of the clove *Karyophyllon* from the Sanskrit word *Karukaphulla*, fruit of the granate-apple-tree, A. Weber has opposed another to which he gives the preference, namely from *Kaṭakaphala*. This word means according to O. Boethlingk and R. Roth's Sanskrit Dictionary the *Saccharum sara Roxb.*, and an one-yearled plant, whence it appears that also under this supposition the Indians had given to the clove the name of a known plant. From *Kaṭaka* of course *Kaṭaka* and thence *Kadaka* may have originated; but I do not see why my explanation should not have as good a claim to validity as that opposed to it]

¹ D. P., XII, 14, 2, where it is said that some called it *Zimphire*, which is less correct because the Greek name is corrupted from the Sanskrit *Śrīgabera*; then *Dioskorides De mat. med.* II, 190 and *Galenos, De simplic. medic. temper.* VI introd. *siv. med.* XIV?

² *Pliny* XII, 18, 1; *Dioskorides, De mat. med.* I, 17, and *Galenos purgant. med.* XIII and XIV and *De simplic. medic. temper.* VII, 10, 3.

³ D. and P. especially p. 37 the pages cited I, p, 281, Note 1 and p. 283, Note 3.

the place, picked up the bundles, drew out the threads and fibres of the reeds called *Petra*, rolled them up, and wrapped them into the fibres of the reed of the leaves they obtained three kinds of *Malabathron* which bore special names according to the various sizes of the leaves.¹ Those people brought afterwards these three kinds of *Malabathron* to India or more correctly to the emporium *Gange* situated on the mouths of the Ganges.² The explanation of this somewhat obscure report is perhaps the following. Merchants who undertook annual voyages to the country of the *Thinai*, had observed that the *Besodai* went yearly to the limits of the northern high land in order there to celebrate a festival, and to carry there the leaves of the *Malabathron*-bearing trees which are found . . . in eastern Kinalaya.³ The merchants probably so arranged their annual journeys that shortly after the departure of the *Besodai* they arrived in the place where the latter had kept the festival and left behind them the *Malabathron* leaves which they esteemed but little. The merchants picked them up, sorted them according to their various sizes, rolled them up and took them to the

¹ The expression *μέσοςφαιρον* for *Malabathron* with the biggest leaves *mesóphairon* for the leaves of middle size, and *μικρόσφαιρον* for those with the smallest leaves, are latin expressions and again occur in the *Nard*; cf. *Pliny* XII 6, 2. In the name *petra* the author erred, because in Sanskrit *patra* does not mean reed but leaf. The second part of the name of *phairon* relates to the rolling up of the leaves.

² According to the *Peripl. Mar. Erythr.*, p. 38. I shall afterwards show that the name *Pesadai* attributed by Ptolemy to the above nation, is derived from the Sanskrit *vaiśāḍa*, i.e. lazy, and melancholy, and that they dwelt in Silihim in the Malaya. I also add, that the *folium pentasphaeron* and the *folium barbaricum* in the Digests can be neither Betel nor *Malabathron* as Salmasius had suspected l. q. w. p. 765 a, c. and b, c; not the second, because *Malabathron* is afterwards specially noted in the Digests; nor the first, because the use of betel leaves in such early times cannot be demonstrated. The name of a leaf *barbaricum* is probably not to be explained from that of the port *Barbarci* or *Barbarion* (cf. II, p. 528) which is situated on the mouths of the Indus, but from *barbarichéskolpos* on the Ethiopian coast (s. Ptol. IV, 7·8) where according to the *Peripl. Mar. Erythr.*, p. 6, a barbarian nation lived. Therefore the leaf called *pentasphaerum* was probably used also of this coast, and was a leaf rolled up fivefold.

³ See I, p. 293.

coast, where they sold them to the merchants there, and must have got great profit from this sale, because this valuable article of Indian commerce cost them almost nothing. The principal *Malabathron* came however from the *kirradia*-country or the region on the coast of Further India, between the river *katabeda* or *karnacālī* in the North and the *Tokasanna* or *Arakon-river* in the South;¹ a statement which excites no surprise, because in *Silhet* which was not very distant from *kirradia*, *Malabathron* is produced.² In the eyes of the Romans, *Malabathron* was of extremely high value, and used for various purposes. An oil was prepared of it, of which one pound cost 60 denarii or about 12 Thalers [German dollars], whilst the price of *Malabathron* itself changed greatly or oscillated somewhat less than 6 Gr. and 300 denarii or never to 53 Thalers.³ It also served to impart a greater flavour to wine. Lastly also various medicines were produced from *Malabathron*, accurate data whereon, do not belong to this place.⁴

Now we reach the last division of the vegetable wares of India which formed an object of export from India, namely the *perfumes*. Among these *Agallochum* or eaglewood is not only a product of Further India but also of Asam and is mentioned already in the great Epics by the Sanskrit name *aguru* as a present brought from Asam to the Indian Kings.⁵ The ancients used it only as a medicine.⁶ At a yet later period of time than what

¹ Ptol. VII, 2, 2 and 15. I shall afterwards again speak of the side of this country.

² See I, p. 281, Note 2.

³ Pliny XII, 59, 1, where [the best *Malabathron* is said to have come from India.

⁴ Pliny XXIII, 48, 1, and *Gal. de compos. med. sel-loc.* IV, XII, p. 756, ed. *Kuhn*.

See I, 285 and p. 554, Note 1, further, W. Robinson's *A Descriptive Account of Asam*, p. 63.

⁵ *Dioscorides De mat. med.* I, 21, where the statements that *Agallochum* is imported from India and Arabia to be so understood that it was conveyed to the western peoples from India across Arabia. In the Digests we must probably with Gothopredus amend *alohelucia* to *agalloche*. See also *Gabnes De succed* XIX. nn. 723 and 733, ed. *Kuhn*.

this portion of Indian commercial history embraces, we find eagle-wood mentioned by the name of *Aloe* as a merchandise brought to Taprobane from countries situated more to the east.¹

As the Romans received the best frankincense not from India but from Arabia, it need here be observed of it only that according to the testimony of the author of the *Periplus of the Red Sea* it was exported from India.² The Romans used it to impart a pleasant smell to wine ; but the special use was a medical one.³ In this place it may be most suitably mentioned that the Indian *myrrh* was plucked from a thorn-bush in those parts, and was easily recognizable ; only the worst kind was exported from India, and often used to adulterate the Arabic myrrh.⁴

The products of the *Sandal-tree* so highly esteemed by the Indians and applied to several purposes, were but slightly used among the Greeks and Romans. In the *Periplus of the Red Sea* the lection is corrupt and instead of *zálonsugalinon* we must read *satalinon* or more correctly *santalinon*. The only use of this word which can be pointed out among the ancients is that in medicine, as a purgative. In the first third of the 6th century A.C. sandal-wood was exported from the eastern parts to Taprobane ; by these no doubt such must be understood as are situated on the Sunda-islands, because the Sandal-tree is indigenous on them.⁵

As the name *kostos* among the ancients, is to be explained from the Sanskrit-word *kushtha*,⁶ it is probable that India first yielded this aroma which the ancients received also from Syria and Arabia, and that also afterwards it was principally brought

¹ *Kosmas*, p. 337, C.

² *Peripl. Mar. Erythr.*, p. 28 and *Pliny* XII, 35, 4. Also *Dioskorides* speaks of Indian frankincense *De mat. med.* I, 81.

³ *Pliny* XIV, 15, 1, and on the use of frankincense in medicine, especially *Galenos*, *De simpl. med. temp.* VII, 30. In D. it is called *smyrna*.

⁴ *Pliny* XII, 35, 4.

⁵ See, I. p. 287, and Note I. The usual Greek form is *Sáantalón*, see *ibid.*, cf. also *Galenos med. XIV*, p. 759, ed. Kuhn, where the form of names is *Sándala* which comes quite near the present one, and the *Zandana* used by *Kosmas*, p. 737, C, resembles the Indian *Chandana*.

⁶ Cf. I, p. 288, Note 1.

from India to the inhabitants of the Roman empire. The Romans used the *kostos* frequently for oils, salves, and sacrifices; it also served to spice the wine; further, physicians used it as a medicine.¹ A pound of *kostos* was sold for six *denarii* about or 1 Thaler 5 Groschen.

Although the ancients speak of Gallic, Celtic, Syrian, and other kinds of Nard, and this plant prospered also in Cedrosia² the precedence must nevertheless be attributed above all others to the Indian Nard. Leaves were called *hadrosphaeron*, 1 pound of them was paid 50 *denarii*; the *mesosphaeron*, cost 60 *denarii*; the smallest, called *microsphaeron* cost 75 *denarii*.³

The *nardinum* or nardsalve was composed of olive or grape-juice, balsam, rushes, *kostos*, nard, amomum, myrrh, and chestnuts; this however was a deception and the abuse had prevailed to attribute to nine other plants, which resembled the Indian nard, its name. Further, wine was spiced by an addition of nard, and at that time the Romans had commenced to wear garlands of nard-leaves. Lastly it must be mentioned that the leaves of the Nard were used also in medicine; the most effective ones were the Indian ones.³

In conclusion it must firstly be observed that *Bdellion* which is in the Periplus of the Red Sea called *Bdella*, can with certainty be pointed out only in India and in the adjoining Gedrosia.⁴ At the sacrifices it was mixed into the wine and served besides also as a medicine. Secondly a plant may be mentioned, the

¹ P. and D. The *costamomum* here adduced by the side of *kostum* is probably a kind of amomum (on which cf. I, p. 281, Note 1) which resembled *kostos*. As this plant which is not yet more clearly determined was a product of Media and Armenia, *costamomum* was probably not brought from India. See further *Pliny XII*, 25, 1; *XIII*, 2, 8; *XIV*, 19, 6, and *XXII*, 56, 1. On the use of the *kostos* in medicine see *Dioskorides De mat. med.* I, 15 and *Galenos De simplic medic. temper.* V, 22, VII, 46; *De composit. medic. sec. loc.* VI, p. 155, ed. Kuhn.

² On these mercantile names see above p. 38.

³ *Galenos, De simplic medic. temper.* VIII, 13.

⁴ Cf. I, p. 289, on the various data and on its different names *ibid*, p. 290, Note 1; and *Pliny XII*, 19, 1, *Dioskorides De mat. med.* I, 80 and *Galenos Ad glance. de med. meth.* II, p. 106, ed. Kuhn. *De med. temper.* V, 8 and 9, *De compos. med. per. gen.* IV, 8.

determination of which is subject to considerable difficulties. It is described as the grape of the *Amomum* which was produced by a vine growing wild ; other reporters considered it as a peculiar bush which attained the height of a flat hand. The fruits were plucked with the roots, and put together in bundles, because they were very fragile. That species was most esteemed, the leaves whereof resembled those of the Punic apples but had either no wrinkles nor their red colour. It was in goodness next approached by the pale kind, still worse was a grass-like one, and the worst kind was the white one, which properly may have been a consequence of age. The *Amomum* as well as the grapes was imported to the Romans ; a pound of the best kind cost 60 denarii or 11 Thlr., a pound of piece-meal *Amomum* 48 denarii or about 9 Thlr. It grew in the part of Armenia which was called Otene, in Media, and in Pontas. It was adulterated by the admixture of Punic leaves and gum, in order to make it stick together and to work itself up in the manner of grapes. Lastly there was a species, called *Amomus*, having fewer veins and less perfume, but harder than the former, whence it may be concluded that it was either another species, or that it was gathered in unripe.¹ The description fits the *cissus vitiginea* best which is by the Arabs called *hamāna* and grows in Armenia, Media and India. The second kind was probably not really one like it, but Pliny had probably single unripe specimens of the first kind in his mind.

In comparison with the mineral and the vegetable products, those of the animal kingdom which were objects of export to India, are of small importance. The elephant the most valuable animal of India, was not at all esteemed by the Emperors of Rome, because in their wars with the Parthians they could not make use of these slow animals against the swift cavalry of the Parthian armies, and because for the battles in the circus they imported elephants from Mauritania. The other Roman

¹ Pliny XII, 28, 1, foll. with the note in the ed. of Desfontaines, V, p. 42. The region of Armenia called *Otene* cannot be accurately determined because the name does not occur elsewhere.

animals were of value to the Romans only inasmuch as they could be used in the Ciricensian games.¹ Further, the Indian animals produced no objects of great use to the inhabitants of the Roman empire; the only exception is silk and pearls; but these have been considered already before. Besides these and ivory, only the *lions*, *lionesses*, *panthers* and *leopards* in the Roman code of laws, and no doubt used in the Ciricensian games were important. The only other mention of an Indian animal which was carried to western nations is, that an Indian peacock was presented to a king of Egypt, no doubt to a Lagide.²

As *ivory* was also exported from Ethiopia to Rome, and likewise to other towns of the Roman Empire, it cannot be determined whether most of the ivory came from that country or from India, especially as Roman poets occasionally designate things manufactured of ivory, as Indian ones, without its being possible to conclude that they were really such.³ It is however certain from the testimony of the Alexandrian Periegete that ivory was exported also from India, and in Rome it was so greatly squandered, that large elephant teeth could not be obtained except from India, so that it was necessary also to saw up the bones of elephants in order to supply the want of real ivory.⁴ This is explained by the fact that ivory was used not only for figures, but for a number of small utensils and ornamental things.

What animals they were whose *wool* was brought to Alexandria cannot be determined, because in the Roman code of law the reading is corrupt and no body has proposed a tenable correction of it.⁵ This remark holds good also of the

¹ On this occasion I observe that the name of the elephants occurring in *Dosarene* (not *Desarene*) in the *Peripl. Mar. Erythr.*, p. 35. is to be amended from *Bosare* to *Dosare*, because they as well as the district, were indebted for their name to the river *Dosaron*, the present *Vasilarapi* or *Kulyd*.

² *Ailianos, De nat. anim.* XI, 33.

³ As A. W. Von Schlegel remarks in his dissertation *On the History of the Elephant*, Ind. Bibl. I, p. 144.

⁴ Pliny VIII, 4. 1.

⁵ D. it is called *marccorum lana*.

Indian horns mentioned in the same work; they probably served for the manufacture of sieves. The *horns* mentioned in the Periplus of the Red Sea among the articles of export, were probably ox-horns, at any rate it is stated that a great ox-horn was sent from India to Ptolemy the second, although the size attributed to it must be rejected as an exaggeration.¹ Whether at that time already *Musk* was brought from India to the Roman empire, is dubious, because *castoreum* (of which physicians made use, is of the castor, which was collected in Pontus and Galatia, and because the musk-deer and Musk are only mentioned by Kosmas as an Indian one, although he wrongly represents the animal as one living in Taprobane, because on the contrary it is found in Tibet, Nepal, Bhutan and Asam.²

Only two wares pertaining to the animal kingdom yet remain those of which we know, that they were brought from India to the western nations across the Red Sea. The first is in the Periplus of the Red Sea called *pinikón*. By it a dirty substance resembling silk is to be understood which was collected and spun from the sea-shell called *pínna*, it was weaved into various garments, gloves, stockings and the like.³ Whilst this substance was produced by an animal living at the same time on land and in the sea, namely the *tortoise*. These animals were captured partly on the small islands near the Malabar-coast named *Limyrike* by the ancients, and were partly called *chrusonetitiká*. This name is no doubt corrupt and has to be amended to *chrusonesiotiké* because the author of the Periplus of the Red Sea mentions in another place, that not far from the mouths of the Ganges an island was situated in the ocean, which is towards the East on the outermost end of the world,

¹ *Aelianos. De nat. anim.*, III, 34. According to him it would be so large as to embrace three amphoras.

² *Pliny* VIII, 47, 1, and XXXII, 12, 2. further *Galenos De simplic. medic. temper* I, 45; *Antigonos* had composed a special treatise on the use of Musk; lastly *Kosmas*, p. 335, C. He calls the animal *móachos* and the musk itself *chastouři* and asserts that the Natives call it so but this word originated probably in Asia Minor, and the second in Sanskrit, *cf.* I, p. 416, Note 2.

³ Therefore the word is more correctly written *rinnichón*.

and that the tortoises found there are the most excellent ones.¹ The second species of tortoises came not from this island, which was probably not a real one, but from the peninsula of Malacca which has in the later reports of the Greeks received the name of the golden peninsula of Malacca Kruse Kersónesos. As the author of the book in question did himself not come farther than the southernmost cape of anterior India, and made only hearsay statements of the Indian countries situated more to the east,² this error is easily explainable be it that he himself or his authorities are responsible for it. According to his report tortoises were caught also on the coasts of Taprobane. In favour of the veracity of this report the circumstance speaks, that on the mouths of the *Nermadd*² large tortoises occur, as well as on the coast of Ceylon and in further India in the island *Keduba*³ whence it may be concluded that these animals were captured also on the small island of the Malabar coast as well as on the coast of Malacca. As far as the use of the tortoises is concerned they were cut into slices, their skins were used to inlay beds, plates and other objects. From the entire back skin the Indians themselves made even lyres.⁴

The conclusion of the articles of export is formed by two wares, which it is true, are not at home in India itself, but were according to the testimony of Alexandrian Periegete brought to Alexandria across India. The first are the *Seric Skins* which come, according to the remarks previously submitted on this name, from inner Asia ; but what animals were flayed of them

¹ *Peripl. Mar. Erythr.* pp. 32, 35 and 36.

² *Cf.* II, p. 541. Hereto it must be added that he mentions before another island on the mouth of the Ganges, which is called Chryse and is probably the same as the first.

³ Ritter's *Asien* IV, 1, p. 147 and p. 580 ; and Edward P. Halstead's *Report on the Island of Chedooba* in the *T. of the S. of B.* X, p. 368. Also Pliny testifies IX, 12, 1, that very large tortoises lived in the Indian Sea.

⁴ *Plin.* IX, 13, 1 and *Pausanias* VIII, 24, 9. According to him there were in the forests of Arcadia, tortoises of considerable size, of which they made lyres like the Indians.

can of course not be ascertained. This statement suffices however, to demonstrate in general that between India and High-Asia commercial connections existed or rather continued to exist, because their first beginnings go up into a much earlier time. With respect to value the second ware is by far more important, because the Romans paid an almost incredibly high price for it. They are the celebrated *murrhinian vessels*, which were according to the Report of the Alexandrian merchant, exported from Barygaza at the same time with the Onyxes.¹ The stones of which these costly vessels were manufactured, occurred in more distant but sufficiently known regions of the Parthian empire, but especially in Karmania. Some places where this material was found must be referred to East Iranian countries, because otherwise we could not explain how murrhinian vessels were exported across India. They were probably like the wares immediately afterwards adduced in the Periplus of the Red Sea, brought to Barygaza across *Poklas* or the region around *Puskala*.

The various statements of the classic authors about them, which can here not be collected or explained, may be most appropriately reconciled to each other if we assume that they have been partly river-spates, partly field-spates, partly lime-spates, partly adular-spates. They are distinguished by hardness and their lovely colours, among which purple and white were] predominant. By this quality they approached precious stones. These kinds of stone were chiefly used for the manufacture of drinking and easing vessels as well as for small tables. The first murrhinian drinking vessels were by Pompey,¹ brought to Rome in his third triumph after the conquest of the nations of Asia Minor in the year 51 before Christ. After that Murrhinian vessels became soon very common, and the luxury carried on with them increased daily. One piece of *murrhinum* out of which only three

¹ *Peripl. Mar. Erythr.* p. 32 and Plin. XXXIII, 2, 3; XXXV, 46, 1; XXXVII, 7, 1, foll. and XXXVIII 8, 1, foll.

The last passage is the principal one.

goblets could be manufactured, each of the size of a *sextarius* containing the 48th part of an amphora, was, according to the various readings of the Ms., sold for 70,000 sesterzii or nearly 4,000 Thlr, or for 70 talents which makes a little more than 2,000 Thlr. According to the context of the passage of Pliny who has preserved us this fact, the last reading is preferable and that also suffices to show the high value at that time put by the Romans on such vessels.

On the wares imported into India besides the known passages of the Periplus of the Red Sea only a few isolated ones of the classic authors at our service, which are to be used in the proper places. In the enumeration of the articles of import I shall arrange them according to the three kingdoms of nature.

From the *mineral-kingdom* the Indians received from foreigners *copper, lead, and tin*; further the Greek-Roman merchants brought valuable *silver-pieces* and *denarii* of gold and of *silver* which they exchanged with advantage for the indigenous coins. They carried also other Roman coins. This article is to be considered as one of the most important ones, because Indian goods were much dearer ones, and outlandish merchants were thereby compelled to take much ready cash with them in order to pay for the wares they brought in India. We have seen already what an immense sum India annually withdrew from the Roman Empire¹ and we shall afterwards find, that in several localities of India in the ruins of ancient towns Roman coins have been discovered.

To another domain of the mineral kingdom the *glass vessels* belong, which is accounted for by the great quantities of wine at that time imported into India whereon I shall afterwards communicate separate data. If this article served for the enjoyment of Indian men, the one to be mentioned next was intended for Indian women *stímmi*, i. e., *síidrum* was used by females to put on their eyelids and eye-brows in order to dye them black. Hereby it must be surprising that the Indians caused this article to be imported from a distance, because

¹ See above p. 4.

that custom is an ancient one among them, and the Indians themselves possess several indigenous substances, *antimony* and others, of which they prepare the *angana*. For other uses *sterax*, arsenic and the flame-coloured dying substance named *sandarichè* which came from the Red Sea and is red arsenic containing sulphur, was used.¹

Corals which were according to the testimony of the author of the *Periplus* of the Red Sea imported into India, arrived there not principally from the Arabian gulf, but perhaps from the Persian one, whilst it is scarcely credible that the principal kind of it, the Gallic ones, were from the country of their origin exported to very distant India.² If the author of the Roman natural history was correctly informed, corals were as highly esteemed in India as pearls in Rome. Of the *chrysolites* it has been remarked before, that those imported into India were Ethiopic ones, because India itself was in possession of such a precious stone.³ The case is similar with the *Sardonyxes*. The Arabic gems of this kind possessed no trace at all of the *Sarde*, and the latter stones endowed with various colours were being given out for *Sardonyxes*. They were partly of black and partly of sky-blue-like colour, either with thick white stripes, or such as approached mountain-cinnabar in brilliancy.⁴ According to the statement of *Zenodotos* these the Indians did not esteem formerly. Some of these precious stones were so large that swords were manufactured of them. The Romans liked them especially, because when used as seal-rings they retained no portion of the wax. The Roman merchants knew how to import to the Indians a taste for these precious stones, and even common people wore them on their necks. From this example and from the *Stibium* adduced above, we see that in isolated cases the Indians gave to the products of foreign countries the preference over their own. That India itself was rich in *Sardonyxes* has been shown already before.

¹ Pliny XXXV, 22, cf. *Delafosse* in his ed. IX, p. 272.

² *Ibid.* XXXII, 11, 1.

³ See above p. 18.

⁴ Pliny XXXVII, 23, 3.

Considering the exuberant plant-treasures of India it may be supposed that foreign countries possessed but few products of this kind of advantages or otherwise attractive to the Indians. This expectation is confirmed by the phenomenon that we find but a small number of wares of the above kind mentioned as imported to the Indians by foreign merchants.

They are firstly frankincense and a costly oil or salve prepared from it. Further which is probably the Egyptian lotus the stalks whereof contain a sweet edible substance which the Egyptians esteemed as very savoury.¹ The next article of import, namely *wine*, is a surprising one. It was produced not only in *Loodikeia* in Syria but even in Italy.² Still more strange is the circumstance, because wine and other intoxicating beverages are prohibited to the Indians by their laws, and the importation of wines might be considered as a deviation of the laws. This case may partly have taken place really, but especially among Indian princes, because according to the testimony of the Alexandrian merchant to one of them wine was sent as a gift. We would however be doing wrong to the Indians if we were to judge from this importation of wine, and from the assertion of *Chares of Mytilene*,³ a historian of Alexander the Great that the Indians were given to drinking, and that the use of wine had become usual with them; for, this statement must be rejected as a Greek fiction.

¹ Vincent l. q. w. II, p. 74.

² *Peripl. Mar. Erythr.*, pp. 22, 28. The simultaneously cited Arabian wine was probably not grown in Arabia itself, but only carried through that country to India.

³ It occurs in *Athenaios* X. 49, p. 437 and in *Aelianos, Var. Hist.* II. 41, and from the book of the former in the *Script. Er. Alex. Magn.* ed. C. Mueller p. 18, a. According to this narrative, Alexander the Great ordered that at the festival which was celebrated at the self-cremation of *Kalanos* in Persia (on which cf. II, p. 696) a drinking competition should take place on account of the love of the Indians for wine; to the first victor a prize of one talent, the second of 30 Min and to the third of 10 was granted. The victor had swallowed four *Choas* of wine and died according to one report immediately, and according to another three days later. His name was *Promachos*; as this name means pre-fighter it is no doubt fictitious, and also the other circumstances show sufficiently that the whole tale is an invented one.

The other goods yet mentioned in the *Periplus of the Red Sea* as imported into India, are garments, one species whereof is indicated only in general expressions. This expression is *ímatismosáplañs* or *nódos* also *rolúmita* or *rolúmitai*. The last word means clothes the woof whereof contained several threads in order to weave into it flowers and other figures. Here from it may be concluded that the first word means garments manufactured from single clothes; the second on the other hand, garments of a commoner sort. By the above name we may most suitably understand linen clothes, because the western nations received from India cotton as well as silk-clothes. The second kind of garments were girdles one ell long.

Of what kind the *musical instruments* were cannot be accurately ascertained; they also probably form no strict object of importation, because they are adduced as gifts to *Mumbaros* or *Akabarns* the King of Aryake.¹ To him besides, beautiful maidens for his harem were brought, who of course, were not a merchandise.

After this enumeration of the wares exported from India and of those imported into it, I pass over to their distribution among various parts. Herein I shall take the series observed in the *Periplus of the Red Sea* for my guide, and shall refer to the already promised explanations of the names of the wares. In the emporia not situated in India it is necessary to make a selection and to mention only such goods, of which it is certain that they were not found in India, and that they were brought to this country.

Musa, on the coast of Arabia.² Articles of importation saffron and Odónion, Exportation—A. Frankincense.

Opone on the barbarian gulf in Ethiopia.³ From the interior country of *Aryake* and *Barygaza*, or more correctly, through that town, were exported rice, *Bouturon* or *Assafoetida*, sesame oil,

¹ On the dubious name of this king and the limits of *Aryake* cf. II, p. 855, note 1. Vincent is mistaken l. q. w. II, p. 385, when he considers him to be the king of the Indoscythians residing in *Ninnagara*.

² *Peripl. Mar. Erythr.*, p. 22 and on the site of *Musas* above II, p. 584.

³ *Ibid.*, p. 7 and on the site of this gulf, see above p. 8.

fine woollen clothes of the kind *monach* and *Sakchari* or sugar in grains, flour-sugar.

In *Azania*, the island at present called Pemba on the East coast of Africa, Greeks, Indians, and Arabs had settled for trading.¹ There but few Indian merchants came from *Muzinris* or Mangalor, from *Barygaza* and *Limyrike* the ships of which were thrown there by unfavourable winds. There they sold rice, wheat, fine Indian cotton clothes and female slaves whom they occasionally also eloped with, from there, and loaded their ships with tortoises.

To *Mosyllon*, an excellent port of the Sachalitic gulf, or rather at the eastern end of it, ships occasionally sailed from *Barygaza* and *Limyrike* which were thrown by storm out of their destination, and the captains whereof spent there the whole winter if they came too late, in order immediately to be able to sail further.² With the minister of the King reigning there they bartered frankincense for fine cotton-clothes, wheat and oil.

On the Persian gulf, a little south of *Teredon*, on the western bank of the *Pasitigris*, was situated their celebrated port *Apologoi* where the merchants were treated with justice; further east, on the coast of *Karmania* was *Omana*, a second emporium much visited at that time.³ To both these emporia, in great ships, copper was brought, which however scarcely came from India; sandal-wood and beams of timber, probably of teak wood, horns, oil of scasame and mahogany. In India itself, we first meet with the port *Barbarikon* on a mouth of the Indus and on this river it traded with *Minnagara* which was at that time the capital of Indoscythia, and where at present Ahmedpur is situated.⁴ To it many garments manufactured of one-woof clothes and but few of the commoner sort were imported;

¹ *Ibid*, pp. 17 and 16 and *G. Bunsen's Diss. on the East coast of Zania in Africa*, p. 17.

² *Peripl. Mar. Erythr.* p. 8 and on the site of this port cf. II, p. 534.

³ *Peripl. Mar. Erythr.*, p. 22 and *Markianos Heracl.*, p. 22. It is probably no other than the coast town called by *Ptolemy* VI, 6, Ta Kommnana or in some Ms. Tá Nommana because the site fits, and the above variants could easily originate from Tá 'Omana.

⁴ *Peripl. Mar. Erythr.*, pp. 22 and 24.

further, clothes which were made of many roofed clothes ; further chrysolites, corals, storaxes, glass vessels, among which especially drinking vessels must be understood ; little wine, silver-things and coins. The articles of export consisted of *Kostos*, *Dellion*, *Lykion*, *Nard*, *Kallaina*, precious gems, Seric skins, fine cotton-clothes, silk-yarn and indigo.

The most celebrated of all the Indian emporia of that time was *Barygaza* which maintained a very lively commercial intercourse with the various Indian countries as well as with foreign regions.¹ The outermost point of its commercial connexions was the country of the *Thinai* or Chinese, from which silk-clothes were brought by land to *Barygaza* by the way of *Bactria*.² Most of the fine cotton-clothes were brought from *Minnagara* ; further, *Barygaza* received from other Indian regions fine cotton-clothes and such as were of small value and were called *molichinai* besides many other yet worse kinds. From *Poklais* or the vicinity of the town *Peukela* in the vicinity of the Indus, through *Indosecythia*, the three kinds of *Nard* were brought to *Barygaza* which were called *kattyburine*, *Patropapige*, and *Kabulite* and the names whereof have been explained above.³ Besides on this way also, *Kostos* and *Bdellion* arrived. From *Paithana* or *Pratiṣṭhāna* on the upper *Godāvarī* came many onyxes and from *Tagara* in the vicinity of the present *Kalberga*, all sorts of commoner cotton-clothes. By these numerous importations the merchants of *Barygaza* were placed in a position to present a rich choice of goods to their Greek-Roman customers, as the following list shows. Thence were exported : saffron, *Lykion*, clothes dyed with lac, oil of sesame and assafoetida, sandal-wood and beams which were probably of teakwood ; long pepper, *Kostos*, three kinds of *Nard*, *Bdellion*, and Indian frank-incense ; cotton yarn, cotton clothes of every kind and silk goods, lastly horns and ivory. *Barygaza* furnished also contributions

¹ *Ibid.*, pp. 24, 28, 29 and 36.

² It cannot but be an error when it is said that these clothes were brought from *Barygaza* to the Ganges and thence to *Limyrice*, because this would evidently have been a very useless circuit.

³ See above p. 4.

to the goods which were imported into Muza at the entrance of the Red Sea.¹ Besides, also other articles, not described more closely, were exported from Barygaza. From the Gangetic countries nards, the Malabathron obtained from raw Besadai, *pinikon* and most excellent cotton-clothes were exported by sea to *Limyrice*.²

As we have no reports at our disposal concerning the other ramifications of commercial intercourse of India with foreign lands, during the first three post-Christian centuries, and as in the east commerce is subject but to few fluctuations, and usually follows the same directions, I consider myself justified to appeal to authors of a later age in order to obtain light on this point. When the *Byzantine* emperor *Heraklios* destroyed *Dasdagerd* in the year 627 in the palace of that place, belonging to the *Sassanian* Chosroes the second or *Khosru Parvîz*, a treasure of costly wares was found, some of which are undoubtedly of Indian origin.³ Such are *Aloe* or *Agallochum*, and large blocks of that wood weighing 18 pounds; further, pepper, ginger, and several kinds of spices, sugar; further an immense quantity of cotton drawers. Besides these the great quantity of silk and the garments made of it were probably from China, although they may also have been of Indian origin, or may have reached *Dasdagerd* through India. The conclusion drawn from this fact that already under the oldest *Sassanians*, commercial connections existed with India, I consider as the more admissible, as already the founder of the new Persian kingdom *Artaxerxes* the First had begun diplomatic relations with the Indian king *Samudragupta*, the objects whereof were probably more of a commercial than of a political nature.⁴

II.—The Commercial Nations.

The Fate of Commerce.

At the conclusion of the last pre-Christian and during the three first post-Christian centuries the maritime commerce from

¹ *Peripl. Mar. Erythr.*, p. 13.

² *Peripl. Mar. Erythr.*, pp. 36 and 37, with the explanations of the report on the *Sesatai* or more correctly *Besadai* above p. 37.

³ *Kedrenos* I, p. 732 of Bonn. ed. and *The ophanes* I, p. 494 of same ed.

⁴ See II, p. 957.

the Red Sea with the Indian countries far surpassed in importance the other branches of Indian commerce, and only on it we possess somewhat satisfactory elucidations. In the carrying on of this commerce, to the Indian commerce at least as great a share must be attributed as to the Greek-Roman ones. As far as the fortification of the latter is concerned I first mention that since the discovery, or rather the re-discovery of the monsoon by *Hippalos*, annually fleets of merchant ships navigated from the Red Sea to Indian 'ports', secondly that the Greek and Roman merchants living in India had given to a town in the peninsula of Guzerat the name *Theophila*, and had named one of their factories on the Malabar-coast *Byzantion*, and had likewise transferred the names of localities on the coasts of Taprobane into the Greek language.¹ These facts testify to a frequent and long stay of Greek and Roman merchants in the above-mentioned regions of India. The third circumstance here coming into consideration is the existence of many narratives of such persons from which *Pliny* and *Ptolemy* have drawn their exact natural, historical and geographical data about India. Hereto it must also be added that in *Muziris* or Mangalor a great many Greek merchants lived.²

The considerable participation of the Indians in maritime commerce now in question, is firstly verified by the following statements. In the island *Dioskorida*, at present called Diu Sokotora, Indians and Arabs and on the other hand but few Greeks dwelt for the sake of commerce; the population of the island consisted of these foreign colonists.³

To *Azania* on the Ethiopian coast Indian merchants from *Muziris* came.⁴ We have further seen that in the region on the Pontus, Indians lived, who sold spurious for genuine, beryls.⁵ The most important fact however is the following: the trustworthy *Cornelius Nepos* had related that to *G. Metellus*

¹ See p. 6.

² *Peripl. Mar. Erythr.*, p. 30

³ *Ibid.*, p. 18.

⁴ *Ibid.*, p. 18.

⁵ See above, p. 17.

Celer the Proconsul of Gallia, who administered that office in the year 60 B.C. some Indians were sent as presents by a king of the *Suevi* or according to another statement by a ruler of the *Boi* [Allahi asserts in the *Literary Central Periodical* Nr. 57, p. 91, that in passages of *Pomponius Mela* and of *Pliny Windians* must be read, and appeals to *Schaffarik's Slavonian Antiquities* German translation I, p. 115. Against this assertion the following reasons militate : Firstly, that in both authors, the reading is accredited in all manuscripts ; secondly, *Pliny* says that these Indians had come *from India* which is quite incredible of the barbarian *Windians*, because they cannot be supposed to have traded with the Indians. Thirdly, it cannot be pointed out that *Slavonic* peoples had settled on the coast of the East Sea already in 60 B.C. It is at least dubious whether the *Venedi* who are also called *Veneti*, must be considered as belonging to the Fins or to the Germans. The case is quite different with the much later *Markianos* of *Haraklia*, where the reading *ei's tôn ou-ndikòn kólpon* is confirmed by Ms. Here I omit two useless footnotes] who had for commercial purposes navigated the Indian seas, and had by storms been thrown so far from their native country.¹ But as it is impossible that Indians should have sailed from their country through the Indian Ocean, and should have circumnavigated not only the whole of Africa but also the whole West-coast of Europe, and as they would moreover in this case have landed on the French or English coast we can scarcely err if we assume that those Indians had sailed across the Caspian Sea, the navigation whereof had become known already to *Herodotus*² and they had by stormy weather been thrown to the north-coast of it. Thence they probably reached the country of the *Boi*, whose prince sent them to the sovereign of the more western *Suevi* who in his turn despatched them to the Roman Proconsul of Gallia. From this well-authenticated fact we may conclude that Indian merchants personally shared in the commerce with

¹ *Pliny* II, 67, 4, *Pomponius Mela* III, 5, 8. The first calls him the king of the *Suevi*, the latter of the *Boi*.

² *Cf.* II, p. 603.

the Roman empire, which was carried on from India across Bactria, the Caspian Sea and the Caucasus as far as the Black Sea.

Secondly, the embassies of Indian princes to the Roman emperor also militate against active participation of the Indians in the lucrative commerce with the Roman empire. For examples of this kind are mentioned by the classical writers. The first embassy was sent by a king of the name *Poros* to the emperor *Augustus*. Concerning the separate circumstances thereof we learn the following from *Nikolaos* of Damascus who had seen the three remaining envoys in the Syrian town Antiochia situated in the vicinity of Daphne.^{1*} These ambassadors brought a letter of the Indian king addressed to the Roman emperor and written in the Greek language, wherein the former announced to the latter, that in spite of six hundred princes being subject to him, he still put a high value on the friendship of Augustus, would be ready to give admittance to his people into all ports of India and to aid them in every way. His ambassadors were accompanied by eight naked servants who wore girdles, were anointed and bore the presents destined for the Roman emperor. These gifts were the following : first the statue of a god whose arms had, beginning from the shoulders, been broken off by a boy, and which was therefore by the Greek authors compared to a *Hermes-column*, which as we know terminated in a quadrangular pillar of a pedestal. It must have been the statue of an Indian god which cannot be determined more precisely. The other presents consisted of large vipers, a serpent 10 ells, and a river turtle 3 ells long, and a great partridge. The majority of the Indian envoys had succumbed to the calamities of the distant journey.

Although on account of the insignificant presents of the Indian prince which he sent to the Roman emperor, and his assertion that he reigned over more than 600 other Indian princes, this report might be considered spurious, other grounds nevertheless induce us to consider it correct ; of course we must

[* Schoff., p 86.—Trs.]

¹ *Strabon* XV, 1, 73, p. 79 and from him in the *Fragments* of Nikolaos, in C. Mueller's *Fragm. Hist. Graec.* III, p. 419.

doubt whether an Indian prince made use of the Greek language, and we are inclined to suspect that his envoys had sold during the journey the more valuable portions of their gifts and had caused a Greek to write another letter. In favour of the general truth of the above narrative I first mention, that just in western India where the seat of the dominion of that *Paurava* or *Poros* is to be sought, the worship of serpents prevailed according to the testimony of the Macedonian authors.¹ It was therefore natural that the Indian prince sent to the Roman emperor an animal sacred in his country. Secondly, there is no objection to the supposition that after the death of the second Kadphises who is to be placed into the beginnings of the Christian era,² a descendant of the ancient *Pauravas* had founded an independent kingdom in the western Punjab. That 600 India princes obeyed him is evidently an exaggeration. According to the above supposition he was a contemporary of the emperor Augustus, who reigned till 14 A.C. and the reason for his embassy can have been only a commercial one, which appears already from the fact that he declared himself ready to grant to Roman subjects free admittance into his country and to aid them in their undertakings.

It may here be observed that the embassy of Peros was accompanied by a pious Buddhist whose name *Zarmanochegas* may be most suitably explained by *Śramaṇāchārya*, i.e., teacher of the *Śramaṇas*.³ As his life had hitherto passed without misfortunes he decided to renounce it, in order that in the last days of his terrestrial existence no calamity might befall him and ascended in Athens, naked and anointed, the funeral pile, and caused the following inscription to be placed over his grave: "Here reposes *Zarmanochegas* an Indian from *Bargosa*^{4*} who committed suicide according to the indigenous custom of the Indians."

¹ Cf. II, pp. 235 and 467.

² Cf. II, p. 821.

³ Wilson *Theatre of the Hindus* I, p. 15, and on the meaning of the title *Sramaṇa* see 449.

⁴ This must be an incorrect form of the well-known *Barygaza*.

[*Schoff. References, p. 298.—Trs.]

The second Indian embassy to a Roman emperor was brought on by the following event: A liberated slave of *Annius Plocamus* who had farmed the tolls of the Red Sea from Government, was, when sailing along the Arabian coast, thrown by north-winds to Karmania and after fifteen days into the port *Hippuros* on the north-west coast of Taprobane* where he was very graciously received by the sovereign of those ports, and remained six months.¹ To the king of Taprobane who questioned him, he gave information about the Romans and their emperor. According to the statement made to him the Singhalese monarch admired the justice of the Roman emperor, especially as the denarii brought by the Romans were of the same weight, but their effigies showed that they were of different emperors. This admiration seems to have arisen from the fact that the art of coining money had in that island made a smaller progress than in the Roman empire. No matter how the case stood, on account of this circumstance the king of Taprobane conceived friendly sentiments towards the Roman emperor and sent to him four ambassadors the principal of whom was called *Rachias*. As this name may be most appropriately explained by *rājan* or king, and this word may also be used for men of the royal race. *Rachias* probably belonged to the king's family, and accordingly we do not learn what his proper name was.² From this ambassador Pliny received very complete informations about Taprobane which can be discussed only in the following section; it will here suffice that at that time *Claudius* who reigned from 41 till 54 A.C. was the emperor of Rome; of the king of Taprobane it may be left undecided whether it was *Chandramukhasiva* who reigned from 44 till 52 A.C. or *Yasolalakatisya* who reigned after him till 60 A.C.,³ although most probably it was the

[* *Ante.*—Trs.]

¹ *Pliny* VI, 24, 4, foll. In the next section I shall show that in the Singhalese language this port bears the synonymous name *Kudre Male*, i.e., horse-mountain, and I shall accurately determine its position.

² Also on p. 60 in the name *Zarmanachegas* the *ch* represents the Sanskrit letter *K* which is related to *G*.

Cf. II, XXIX.

former because the latter had ascended the throne shortly before the death of Claudius.

If I assume that the Singhalese king intended by his embassy to the Roman emperor to foster the affairs of the commerce of his subjects with the Roman empire, I am supported in my view by the fact that another object can scarcely be imagined.

The object of the third embassy is not clear, because only short notices of it have reached posterity. From the Indians who belonged to this embassy, and of whom one was called *Damadamis* and the other *Sandanes*, the well-known gnostic *Bardesanes* obtained his knowledge of the *Brahmans* and *Samaneans*.¹ This embassy was not, as has been supposed before, addressed to the emperor *Antoninus Hilliogabalus*, who reigned from 218 till 220 A.C. but to the emperor *Antoninus Pius* who sat from 158 till 181 A.C. on the throne of the Roman emperors. As on a later occasion the informations preserved so as from the writing of *Bardesanes* about Indian things, will have to be used, it will be proper to communicate from the life of this gnostic what is most important.² *Bardesanes*, or in Syrian *Bar Desan*, i.e., son of *Desan*, was born in Edessa, at all events before 154 A.C. When the emperor *Antoninus Verus* was in Syria he dedicated to him his book on *Destiny*. The Indian embassy with the members whereof he had intercourse in Babylon, was sent to the emperor *Antoninus Pius* who reigned from 158 till 181 A.C. To conclude from the name of one of the ambassadors of *Sandanes*, the Indian king who had despatched this embassy, reigned over the portion of the Malabar-coast, which was called *Aryake** of the *Sadanoi* and

¹ *Porphyr. De Abstin. ab esu*, etc., p. 356 of J. DeRhoer's ed. The name *Damadamis* is not materially different from *Dandamis* as a Brahman is called in the history of Alexander the Great; Cf. II. p. 905, Note 2, where the word is explained. It means one greatly taming himself. Another report of this embassy occurs in *Stolao's Ecl. Phys. I, 3*, in Guisford's ed. I, p. 54.

² *Bardesanes Gnosticus, Syrorum Hymnologus scriptis* of Augustus Hahn 1819. Heeren in his notes to *Stobaios Ecl. Phys. 120* in his ed., p. 149, wrongly assumed an older Syrian and a later Babylonian *Bardesanes*.

[* Schoff., pp. 24, 27, 39, 70, 87, 174, 175, 210.—Trs.]

less correctly *Sandanoi*.¹ Bardesanes was the founder of a gnostic sect and distinguished himself as a poet of hymns in the Syrian language. Of his various writings only one need be mentioned here, namely that entitled, *Indiká*.

Although the fourth Roman Emperor, of whom we learn that Indian envoys were sent to his court, reigned later than 319 A.C., with which year by the elevation of the *Ballabhi* dynasty a turning took place in the political history of India, I do nevertheless not at all hesitate here to mention this event because the establishment of that Indian dominion had exerted no small influence on the fate of the Græco-Roman maritime commerce. Besides there is no suitable opportunity for mentioning the embassies sent from India to the court of the Roman emperor. When the fame of the emperor Indianus had, on account of his wisdom, bravery, and other virtues, spread far beyond the world known at that time, even the most distant nations sent him envoys out of respect.² Among these, the Indian nations also sent their principal men as ambassadors with presents to this king; especially the *Serendivi* and *Divi* are named. By the former the inhabitants of *Simhaladvīpa* or Ceylon are to be understood, which island is by Kosmas called *Sielediva*.³ The *Divi* cannot have been the inhabitants of the island Dni Sokotora on the African coast, which has been thought of, but of the *Maledives* on the south-western coast of India in the vicinity of Ceylon. As peoples living not far from the limits of the Roman empire may have been induced by fear to gain the favour of the Roman emperor by gifts, and ambassadors, this reason was entirely absent from the inhabitants of the distant Indian islands, and we may suppose that commercial reasons had induced the Serendives to offer their homage to the Roman emperor.

¹ According to *Aurelianus Victor Epit.* XV, 4, who gives the following passage: "Even the Indians, Bactrians, and Hyrcanians sent envoys when they had heard of the justice of so great an Emperor" It must have been *Antoninus Pius* and not *Helioabalus* or *Elagabal* who assumed the epithet *M. Aurelius Antonius* and reigned from 218 till 222 A.C.

² *Ammianus Marcellinus* XXII, 7, 10. He places the embassies into the year 302.

³ Cf. I, p. 21, Note 3.

In the next place, one must consider the manner in which navigation to India was carried on. On this subject the author of the *Periplus of the Red Sea*, and of the *Roman Natural history* present the most satisfactory elucidations. On the more ancient circumstances of these voyages to India, before the west-monsoon had again been discovered and used for the acceleration of the voyages, I have already made the necessary statements above¹ and need here only describe the perfected condition.

The departure from Egypt took place in the middle of the month of July.² In about 30 days the merchantmen reached the ports *Okelis* and *Kane* * at the end of the Red Sea; both were situated on the Arabian coast.³ From here the navigators took three roads. Some sailed to the mouths of the Indus and particularly to the port *Barbarikon*; others to *Barygaza*, the chief emporium of Roman Indian maritime commerce; lastly others to *Muziris*† and to other emporia situated more to the south. The approach of the mouths of the Indus was made known to the navigators by two signs,⁴ namely by the white colour of the sea-water, which it obtained from the admixture of the river-water; further by the sight of the serpents of that region. The latter were in the language of the country called *grani*. These certainly will have to be understood not to mean serpents but alligators, many of which occur in the Indus and are also worshipped by the inhabitants of Sind.⁵ The corresponding Sanskrit-word *graha* means among other things an evil spirit, which is said to appear to children and to cause them cramps; in the present case it probably did not have this

¹ See. above, p. 3.

² *Peripl. Mar. Erythr.*, p. 8. *Plin.* VI, 26, 9, and 11, p. 591, Note 1. [**Schoff*, p. 116.—*Trs.*]

³ *Cf.* II, p. 583, Note 2. *Okelis* was situated in the straits of *Babel Mandeb*. According to the *Periplus* the ships called also at a port of the *Kinnamomum-Coast*; see. above, p. 3.

[† *Schoff*, pp. 44, 128, 203-5, 208, 212, 233.—*Trs.*]

⁴ *Peripl. Mar. Erythr.*, p. 21.

⁵ *T. Postan's Personal Observations on Sind*, p. 113.

meaning but the etymological one of catching, because alligators are known to be very greedy. Of the seven mouths of the Sindhu at that time only the middle one was navigable; on it the abovementioned port was situated, which the ships reached by several channels. From it the wares were conveyed on the river to *Minagara* which was at that time the capital of the Indoscythians and is the present *Ahmedpur*. No doubt also the port *Barbarikon*¹ received freight from it by way of the river.

To the voyage from the Indus-mouths towards the south-east the nature of the sea at those ports and the shore bounding it, presented great dangers. The salt-marsh *Irina* and the bay of *Kachchha* which the author of the *Periplus* calls the great and the small *Irinou*, whilst the Alexandrian geographer calls the latter the gulf of *Kanthi*, had many shoals into which ships easily went astray and became fixed, whereon they were broken up by the billows of the sea. Equal dangers were caused by subsequent so-called sea-bay on the northern point of the peninsula of Gujerat, which was by the Alexandrian *Periegete* called *Barakes* and contained seven islands; these are at present called *Bate*. The ebbs and floods of the sea are there great and violent; the sea itself is stormy and full of currents and whirlpools; the depth of the sea is in some places steep and in others rocky. A consequence thereof was, that when the ships sailed into the inside of this bay, the anchors as they were thrown either broke on the rocks or did not reach the bottom of the sea. Only the navigators who shunned this dangerous bay saved their vessels from this danger, whilst those who did not do so, lost theirs. A sign of the vicinity of this ill-boding coast was a kind of large black serpents swimming on the sea, whilst those which appeared in the vicinity of *Barygaza* or more to the south were small, grey or greyish.

Also the next following portion of the Indian shore presented considerable difficulties to the Indiamen. After doubling it the navigators reached the centre of the gulf of *Barygaza* which is at present called the Bay of Cambay. On its entrance at the eastern point of the peninsula of Gujerat the two promontories

[¹ Schoff, pp. 37, 39, 128, 155, 270.—Trs.]

*Astakampron** and *Trapera* were situated.¹ This portion of the sea was greatly exposed to currents. North of those promontories the small island *Baionis* was situated which is at present called Perin. The entrance into the mouth of the Narmadā, on which river Barygaza is situated, was arduous, the ships could steer to the right, i.e., more south or to the left, i.e., more north, the latter side of the mouth could be more easily navigated; because on the northern side there was a coarse rocky shoal called *Herone†* in the vicinity of the village *Kammoni* where at present Dey is situated.² Opposite to it on the south side of the river-mouth the promontory called *Papike‡* was situated, which afforded on account of the violent splashing of the sea its considerable depth and its rocky bottom, only an insecure anchorage.³ Hereto it must also be added that the coasts of the river-mouths are low and their vicinity is to be recognized by marks. Also when the entrance was discovered, the banks in the mouth of the river rendered the sailing into it arduous. In order to protect merchantmen from these dangers, the king of the country had ordered the fishermen to sail to meet them in their long vessels partly called *Troppaga* and partly *Kotymba* as far as the vicinity of *Sygrastrene§* or the peninsula of Gujerat, and then to guide them into the port.⁴ These pilots led the

[* Schoff., pp. 39-40.—Trs.]

¹ *Peripl. Mar. Erythr.*, pp. 24 and 25. In the first passage the name of the first cape is only *Asta*, in the second, no doubt, more correctly *Astakampron* because in Sanskrit *Asta* means west, and is therefore opposed to an eastern Kampron (situated on the opposite coast of the continent) which must have been on the site of the present *Cambay*, because in the vernaculars *Kampron* necessarily became *Kamba*. The termination was probably altered by the Portuguese, in whose language *bahia* means a port.

† [Schoff., pp. 39, 182.—Trs.]

² It is in Ptolemy VII, 1, 4 called *Kammanei*.

‡ [Schoff., pp. 39, 40, 181. —Trs.]

³ The name must, in Sanskrit, have been *Pāpika* sinful, malicious, and refers, in this case, to the ill-boding cape.

§ [Schoff., pp. 39, 40, 175, 176.—Trs.]

⁴ I have, in II, p. 539, Note 2, observed, that the first name is probably to be explained from *trapāka* by which word there, the fishermen's caste was designated, and which may therefore have been transferred to their vessels, and

ships first through the shallow passages of the river-mouths; then they warped the ships from one station to the other; these stations were all known and determined. Then they lifted the anchors with the beginning of the flood, and in the beginning of the ebb they stopped in such places where the water possessed a sufficient depth.

At that time Barygaza possessed the most extensive commercial connections of all Indian towns, as I have pointed out above more accurately.¹ This advantage it obtained not only from its favourable position, but also from the special favour shown to it by Aryakes, the then ruler, *Sadanes* who was the founder of the new dynasty of the *Sadanoi* as will afterwards appear. During the time of his predecessor Saraganos, the more southern *Kallianu** had become a much frequented and celebrated emporium; at the time of the presence of the Alexandrian Periegete the commerce there had been already since sometime interrupted, and Sadanes who had at that time usurped the power in Barygaza, caused the Greek ships who accidentally arrived there, to be manned by his own people, and compelled them to sail to Barygaza. Somewhat afterwards *Simylla* which the Indians called *Timylla* became a much frequented port, where foreign merchants stayed for a longer time.²

The coast following south of Aryake was dangerous to navigators on account of the multitude of pirates who haunted it. It was therefore avoided by them, but especially the port *Naura** or Honavera† (onort) where the chief seat of the pirates was.³ On the other hand the more southern port *Mucires*§ or Mangalor was frequently visited by Greek merchants as well as

that on the other hand, the second name cannot be derived from the Sanskrit word *Kutumba*.

¹ See above, p. 53.

[*Schoff., p. 197.—Trs.]

² *Ptol.* I, 17, 3.

† [Schoff., pp 44, 303-04.—Trs.]

³ *Pliny* VI, 26, 9, where the reading *Nitrias* is to be corrected to *Naura*; also in *Ptolemy* VII, 1, 7, *Nitra* as I shall show below.

[§ *Ante*.—Trs.]

Nelkynda or *Nileśvara*. They were chiefly attracted by the goodness of the pepper which grew there. Here also the *Indiamen* arriving from the high sea were apprised of the proximity of the shore, by a kind of serpents which were black, but somewhat smaller, and resembling proper serpents more in the structure of their bodies; they had besides bluish red eyes. At the mouth of the small river on which *Nelkynda* is situated, there was a village called *Barake* where the ships took in their cargoes.¹ Besides, the navigation was easy to not heavily laden vessels. At the time when the Greek merchant, to whom we are indebted for these data, visited India, to *Nelkynda* also from *Taprobane* goods were sent, which island was afterwards much frequented by Greek-Roman merchants. In *Barake** they purchased the best sort of pepper, which was brought in canoes made of one trunk of a tree, from the region called *Kottanura*.² *Muziris* yet later maintained its rank among Indian emporia, at the time when the Theban lived from whose communications the author of the treatise addressed to *Palladius*, drew his notion about the Brahmins. The merchants of that port traded not only with *Taprobane* but also with *Abys-Sinia* where the goods were brought from a port on the coast of the *Trog-lonytes* to *Arum†* in *Abyssinia*.³

From *Baluta* or *Kalikāt* we learn in the *Periplus* only that it possessed an excellent port, and of *Komar*, the port in Cape Komorin, that the sanctity of the place attracted also merchants.⁴

As the Alexandrian *Periegete* did not reach further than the last mentioned emporium, and could only so far describe the state of Roman-Indian maritime commerce as an ocular witness,⁵ we have no such correct statements concerning it on the *Coromandel-coast* and in *Further-India*. From other

¹ Cf. II, p. 141, Note 1. The village was also called *Ula-Barake*.

[* Schoff., pp. 38, 39, 174, 175.—Trs.]

² Pliny, VI, 26, 1, and on the name *Kottonara* see above, p. 34.

[† Schoff. References, p. 297.—Trs.]

³ *Pseudo-Callisthenes* Book III, 7, 8, 103 in C. Muell. r's ed.

⁴ *Periplus Mar. Erythr.*, p. 23.

⁵ Cf. ab. o. II, 1, 541.

similar writings Pliny has preserved us the information, that in the second half of December or in the first of January, at which season already the north-east monsoon had begun to blow, the Indiamen began their voyages from the ports of the Malabar coast and therefore reached Egypt within the same year.¹

Soon after the presence of the Alexandrian Periegete in India the commerce of Taprobane with the Roman Empire began to enjoy a great development, which was principally brought on by a Singhalese King who entered into connections with the Emperor Claudius, through an embassy, which has already been mentioned.² From the examination of the description of this island by Ptolemy it will result, that to several localities of it Greek names were given, from which a more frequent and long sojourn of Greek merchants in them, can be concluded. In the navigation between Taprobane and the continent ships with double prows were used which could load nearly 3,000 amphoras. There were shallows of six paces with deep channels in which the anchors could not reach the bottom. Therefore the ships were dragged by them hither and thither³ From *Taprobane* elephants, which are known to be abundant in that island, were in great ships brought to *Kalinga*.⁴

On the further navigation from Taprobane to the Ganges-country, *Pliny* has preserved us the following report, in which however there must be a misunderstanding⁵ He says namely that the navigation from Taprobane to the Prasian nation had before lasted twenty days, but that it had afterwards been estimated seven days, because ships of papyrus and their equipments, such as

¹ *Pliny* VI, 26, 16 and on the north-east monsoon, cf. I, p. 213. This statement must have been drawn from a book the author whereof lived in Egypt, because the months are designated by the Egyptian names *Tybi* and *Mecheiris*. The 6th Mecheiris answers to our 13th January.

² See above, p. 16.

³ *Pliny* VI, 24, 1.

⁴ *Aelianos, De nat. anim.* XVI, 8.

⁵ VI, 22, 2.

current on the Nile, were used, and that these ships sailed as swiftly as the Roman ones. The Egyptians built their ships of Cyperus Papyrus and manufactured of its rind sails and ropes.¹ But as that shrub does not grow in India, we must suppose the ships mentioned to have been built of an Indian tree. Perhaps by it the Dup tree must be understood or the fir-varnish tree from which the Singhalese build ships.² The ropes were undoubtedly made of the fibres of the bark and especially from the strong fibres of the cocoanut-shell and are called *coir*; they are distinguished by their great strength. As the hemp tree grows in Ceylon, the sails were probably made of hemp. We must further imagine the ships to have been larger than those used on the Nile. The Indians possessed such, which were large enough to embark 500 merchants at the same time.³ That by the name Prasians the country on the Ganges must be understood, appears because it must be explained from the Sanskrit word *prāchya*, which word can in this case not designate the previously celebrated people of the Prasians, but only an eastern nation; the inhabitants near the Ganges are precisely the easternmost Indians.

Before I am able to terminate this portion of the history of commerce, I must collect the few statements, which the Alexandrian Periegete communicates on the state of maritime commerce on the Coromandel coast and thence to the Ganges-country. He knew only three emporia the east coast of anterior India, *Kāmara*, § *Poduke* ‡ and *Sópatma*, † of which only the second can be determined more accurately; it answers to the present Pulikat.⁴ Here the ships of the region of the

¹ *Herodotos* II, 96 and *Pliny* XIII, 22, 2.

² John Edge's *Description of the various Classes of Vessels constructed and employed by the Natives of the Coasts of Coromandel, Malabar and the Island of Ceylon.* *J. R. A. S. I.*, p. 13.

³ *Cf.* II, p. 543.

§ [*Schoff.*, pp. 80, 202-4.—*Trs.*]

‡ [*Ibid.*, 46, 242.—*Trs.*]

† [*Ibid.*, 46, 422.—*Trs.*]

⁴ *Peripl. Mar. Erythr.*, p. 84, and *Ptol.* VII, 1, 14.

Malabar coast called *Limyrike* met those which arrived there from the more northern ports. In the navigation from here along the coast, to *Limyrike*, the natives made use of vessels, made of single trunks of trees and called *Sangara*. For the further voyage to the Ganges-mouths and to *Chryse* larger ships were required; these latter ones were called *Kolandio-phonta*.¹ The port whence the merchants began their voyages to *Chryse*, was situated there, where at present *Kalingapatana* or *Chikakol* is situated. Later, in Ptolemy's time they started from *Palura*, the present *Naupara* to the south of the *Mahānada*, and steered obliquely across the Bay of Bengal to *Sada* or *Dvayavatî* (*Than-dwai*). In this ramification of Indian commerce the western merchants took part only after the time in which the *Alexandrian Periegete* visited India. When Ptolemy compared his geography, a certain *Alexandros* had reached *Kattigara* or *Canton*, and also in the following time isolated merchants from the Roman empire arrived there; their voyages to it and in general to *Further-India* were in general not frequent, and the chief share in the commerce between anterior India on the one hand, and *Further-India* and the Indian Archipelago on the other, must be accorded to the Indians, on account of their many settlements in these regions, which I have already indicated before.²

Besides, a statement contained in a Chinese book also militates³ against a frequent intercourse with *Further-India*. According to it the connections between China and India had been interrupted during the reign of the *Weï* and the *Tsin* from 220 till 419 A.C. only under the dynasty of the *Ou* between 222 and 227 A.C. *Fan-Chen*, the king of *Fou-nan* or *Siam*, sent one of his relatives, of the name of *Sou-we*, as ambassador to India. He embarked at the mouth of the

¹ *Peripl. Mar. Erythr.*, p. 34, and on the names of these ships cf. II, p. 543, Note 4. *Chryse* answers nearly to the present *Pegu*; the limits I shall point out more accurately in the following sections.

² See above, p. 6.

³ Stanislas Julien: "*Notices of Foreign Countries and Peoples drawn from Chinese Geographies and Annals.*"... J. A. IVth series X, p. 97.

Tu-keu-li, no doubt the Menam-river, and then sailed along the coast till a large gulf situated to the north-east, i.e., to the Bay of Bengal, and thence he visited also kingdoms situated on the coast of India. Lastly he reached the mouth of the Indus, up which he sailed, and reached in one year the term of his mission. The king there reigning, was rejoiced at the embassy of so distant a monarch and sent him two officers, who brought four costly horses from the Youei-tihi country as a sign of the gratitude of their royal master. There the two Indian envoys met an ambassador of the emperor *Ou*, whose name was *Khang-thai* and title *Kong-long*. The latter questioned the Indians about their country. Of their communications only one need be adduced here, which is to the effect that in India merchants arrived in great numbers by land and by sea. Thence they brought goods of the highest value, and among others, also beautifully worked vessels.

If it be considered that one of the two extreme points of this commerce, i.e., Canton, was in the east, and Rome in the west, then it is clear that at that time a real commerce of the world was carried on through India. For the propagation of Indian goods on the Mediterranean Sea, Alexandria necessarily became the centre, because by far the greatest number of Indian products reached that port by way of the Red Sea. In this branch of Indian commerce western merchants naturally took the greatest share; but also the Indians, many of whom stayed in Egypt for the sake of commerce, as shall afterwards appear. It may here first be pointed out that to the *Nabataeans** but a small share in the commerce between the Roman empire and the Indian countries can be allowed. At that time already they possessed the country of the *Idumaens*, and consequently the ports Elath or Ailana and Ezion† Geber, from which in the oldest times the Ophar-voyages of the Phoenicians took their beginning.¹ Their capital *Petra* ‡ which was

[* Schoff., pp. 11, 29, 51, 60, 80, 102, 103, 104, 109, 200.—Trs.]

† [Schoff., p. 260.—Trs.]

¹ Cf. II, p. 584, foll. and p. 595.

‡ [Schoff., pp. 4, 6, 29, 101-103, 109, 128.—Trs.]

situated not far to the north from those ports in the interior, had a very favourable position for the intermediate commerce between the western countries on the one and between southern Arabia and Babylon on the other hand.¹ The Nabataeans appeared in the centuries which now engage our attention as intermediate traders between the Mindans in eastern Arabia and the *Gerrhaens* on the Persian gulf. As among the goods which were by these peoples brought to Petra, also perfumes are mentioned,² it may be presumed that Indian ones were also among them, especially as India furnished the articles of this kind most esteemed in commerce. Accordingly there is no objection against the view of a well-informed describer of the region in which the Nabataeans dwelt, that they obtained many Indian goods and sent them further.³ The Nabataeans however soon excluded the Mindans from the practice of this commerce and afterwards appeared as that Arab nation which most zealously carried on commerce and acquired for its trading enterprizes the greatest extension. This appears especially from the numerous colonies of the Nabataeans, only two of which it will here suffice to mention,⁴ namely, first *Leukekome** the present Houra on the western coast of Arabia, a little north of Tambo, the post of Medina. If secondly the Nabataeans appear as inhabitants of Arabia Felix⁵ this report can be understood only so that they had there settled a part of their nation in order to keep up the commerce with their northern tribesmen. Probably they made land-commerce the chief object of their activity; it is at least testified that they had taken possession of several islands in the Red Sea in order to plunder from them

¹ That Petra was connected with Babylon by a road, appears from *Strabon* XVI 4, 2, p. 767. See besides, Ritter's explanations in *Asien* VII, 1, p. 124, foll.

² *Strabon* XVI 4, 18, p. 773 and on the peoples mentioned in the text of II, pp. 595 and 600.

³ Léon De Laborde's *Journey in Arabia Petra*, p. 18.

⁴ Ritter (*Asien* VIII, 1, p. 117, foll.) has accurately pointed out the settlements of the Nabataeans.

* [Schoff., pp. 101, 103.—Tra.]

⁵ *Stephanos* of Byz.

the Indiamen sailing from Egypt but were punished for it by the Ptolomæans.¹ Hereto it must be added that they possessed no great ships but only small vessels and rafts.² It is possible that in later times also they attempted to molest the navigators of the Red Sea. To them probably the statement refers that Indiamen took with them cohorts of archers.³ That the Romans brought goods from Petra admits of no difficulty. According to the preceding remarks the Nabataeans can be considered only as mediators in a small portion of the Roman maritime commerce. The chief port in it must be reserved to the Indians, Greeks, and Romans.

If I have asserted before that the Indians were zealously engaged in the commerce carried on from Alexandria to the western countries, that assertion is confirmed by the following surprising fact. Indian wares came to the coasts of Lacedæmonia and the Indians exchanged theirs for the goods there deposited by the Greeks.⁴ Herefrom it does not follow, as the author who has preserved us this statement believes, that in spite of their riches in gold and silver the Indians knew not how to coin money, because they already possessed it, but from this fact it may be concluded that Indian merchants had settled in Alexandria and had procured ships, on which they conveyed the products of their country not only to Lacedæmonia, but also to other countries situated on the Mediterranean Sea.

An indirect argument for the lively commercial intercourse between Egypt and the Indus country occurs in the description of a statue of the river *Indos* by *Kalistratos* who had about the year 250 A.C. described several statues.⁵ From reasons to be afterwards adduced it will result that it must have been placed by an Egyptian or Greek merchant, who had often come to the country situated on the Indus, had made this lucrative business and had in gratitude thereof caused in his own country a statue

¹ *Diodorus* III, 43, and *Strabon* XVI, 4, 18, p. 777.

² *Pliny* XII, 44, 1.

³ *Pliny* VI, 24, 6.

⁴ *Pausanias* III, 12, 4, and on his edition cf. II, p. 48.

⁵ See p. 894 in the ed. of the works of both Philostrati by Olearius.

to be made and to be erected to Indos. That statue was situated near a spring and was an offering made to the nymphs. It corresponded to the character of the river and was made of blackish marble; the river-god had rich and loose hair, the colour of which was not brilliantly black, but the Syrian purple snail preponderated, because the hairs, so to say, moistened and arranged by the adjoining nymphs showed a dark colour at the roots, whilst their points were softened resembling the colour of purple. The eyes were but little suitable for a marble statue because from the pupil a white matter dripped out. On this spot the marble had naturally a white colour, and this representation was intentional because the water of the Indos is predominantly white. The god was represented as drunk, by the colour of the river, because the black colour prevailed. In agreement therewith the god was portrayed tottering and intoxicated like a man who does not stand securely on his feet. Besides, this statue had nothing soft and ornamental, but was distinguished by a correct modelling of the members. The god was quite nude, because on account of the heat of their country the Indians are said to throw off their garments.

If I have before assured that the statue in question was not erected by an Indian but by an Egyptian or Greek, I support that supposition by the fact, that at that time the *Sindhu* was by the Indians not reckoned, among the sacred rivers, but that on the other hand to it, to the *Hydaspes* and to the *Akesines* sacrifices were offered by Alexander the Great when navigating them, and that on the coins of the Indoscythian princes *Mayes* and *Aes* the river Indus was delineated; similarly on the coins of foreign kings.¹ Herefrom it may be concluded, that only among foreign nations the river Indus was really represented by figures, and that therefore its statue described by Kalistratos was not erected by an Indian. If further, the Greek describer of the statue of the Indus meant, that he is represented as drunk, the circumstance is explainable from the circumstances that the Greek artist thought of the expedition of *Dionysos*

¹ Cf. I, pp. 167, 370, Note 2, and p. 380, Note 10.

to India, in which he was surrounded by his intoxicated Bacchantes and nymphs. This is also the reason why the statue of the Indus was erected at a spring dedicated to the nymphs.¹ If Kalistratos wishes to explain its nudity from the circumstance that the Indians walked about naked, this must be considered as an attempt to adduce a witty remark, which is however out of place, because even the Gymnosophists did not entirely renounce clothing.

It is founded not only in the political relations of those times, that the capital of the whole Roman empire received the Indian goods necessarily through Egypt,² but that country was also situated on the shortest route from Rome to India. Accordingly this portion of the Roman-Indian commerce forms the most material part of it and must have been by far mostly commerce by sea. On the commerce by land between the provinces of the Roman empire and India, there are but a few isolated notices at our command, and it is not possible to give even a tolerably complete report on it, but an attempt must be made by the aid of scattered data, to give a short review of this branch of Indian commerce. Hereby it must not be overlooked that we are entitled to conclude from the circumstance of an Indian article having been brought to a country standing under the sceptre of the Roman empire, that this was the case also with the products of India. From India and Arabia, or more correctly across this country, cardamoms were conveyed to Kommagene, Armenia and the Bosphoros³ and thence also probably further to the west. Moreover, a frequent intercourse must have subsisted between Cappadocia and India, because during the reign of Tiberius, king *Archelaos*, the king of that country who was under his supremacy, caused amber to be brought for himself from India.⁴ From the political

¹ Cf. the note of Heyna to the *Images of the Philostrati and the Statues of Callistratus*. Edited by Fredrick Jacob, p. 589.

² See above, p. 2.

³ *Dios orides* I, 5.

⁴ *Pliny* XXXVII, 11, 13, and above p. 32.

circumstances of that time it may be concluded that the smallest portion of the Indian goods was conveyed to the northern countries across the Persian gulf and along the Euphrates, because the mouths of this river were in the power of the Arsakides and the regions near it were the usual battlefield of the Roman and Parthian armies. According to a remark made above, the Parthian kings placed obstacles in the way of the Roman commerce,¹ and merchants probably shunned the route along the Euphrates, because it led through countries, in which the security of their property was jeopardised. Accordingly we shall not be mistaken if we suppose the great caravan of wares from India to have followed the high-way which led from India through Kabulistan, and afterwards through Bactria. At the time of the Alexandrian Periegete its final point was *Minnagara*, the capital of Indoscythia, in the south of the Five-river-country, the present Ahmedpur, and passed first through the region of the *Aratrioi*, the *Arattas* or *Arastras* of the Indian in the Punjab, then the country of the *Arachoten* and *Gandhāra* on the west bank of the Indus as far as *Poklais* or *Puškū*.² In Bactria the route was split into three: the one leading to inner-Asia does not just now concern us. Of the two others the one passed through Herat and through *Hekatonpilon*, the capital of the Parthians to Ekbatana in Media, and thence through the gates of the Zagros to Chala. Of the three routes leading further, herefrom, only the northernmost is to be considered which proceeds to Armenia, Kilikia, Kappadokia and other countries of Asia Minor.³ On this route no doubt the *Aorsier* brought the Indian wares from Media and Armenia and

¹ See above, p. 2.

² *Peripl. Mar. Erythr.*, pp. 26, 27 and 28, with the corrected reading II, p. 159, and Notes 1 and 2 A.—*Schwanbecks'* remarks on this passage in the *Rhein. Mus. Philol.* New series VII, p. 329. In this passage the Periegete erroneously ascribes the town *Bukephala* founded by Alexander the Great to Poklais. I remark on this occasion, II, p. 521, 1, 2. We must instead of, on a navigable branch of the river, read, on the middle river.

³ Cf. above II, p. 529.

carried them to the inhabitants of the shores of the Black Sea.¹ As the Parthian kings of Armenia often sought and found protection at the courts of Roman emperors, they probably also aided merchants in their enterprizes, when they traded in the Roman provinces. The final point of this line of merchandise was probably *Sinope* on the north coast of Asia Minor. My views for this opinion I shall give afterwards.

On the second route leading from Bactria, the Indian goods were on the Oxus brought to the Caspian Sea, and after passing over it they were landed on the opposite shore. From here they arrived in five days on the Phasis on which they were conveyed to the Black Sea, where on the mouth of the river of the same name the Greek colony of the same name, and further to the north *Dioskurias* was situated.² As the Aorsi possessed a large region north of the Caspian Sea yet in the second century³ he probably participated also in this ramification of *land-commerce* between India and the western countries. That Indians also did it has been shown before.⁴ On the ulterior conveyance of Indian articles of commerce to the western countries from the above-mentioned Greek colonial towns, we have no express testimonies of the ancients; several other circumstances however show, that *Sinope* in Paphlagonia was a centre of commerce between the regions of the Black Sea and between the countries washed by the Mediterranean Sea.

This town had a highly favourable position for commerce, because it was situated on a peninsula, and possessed two ports. Its inhabitants had several colonies on the Black Sea, such as *Trapezos* and others. Therefore it was by *Mithridates Eupator* or the Great, made the capital of his kingdom, and even in *Strabo's* time it was yet a splendid, strongly fortified town.⁵ For the very extensive commerce of the Sinopians with other

¹ See hereon, above, p. 619.

² Cf. II, p. 531.

³ Cf. *ibid.*, p. 619.

⁴ See *ibid.*, p. 58.

⁵ *Diodoros* XIV, 30 and 31, and *Strabo* XII, 3, 14, p. 545.

important commercial towns the circumstance may be adduced, that they used to maintain commercial connections also with Alexandria.¹ Accordingly I do not hesitate to remark, that Sinope traded also with Prasis and Dioskurias which were situated on the same sea, and drew wares from them, which were thence by the Sinopians carried to the great maritime towns of the Mediterranean Sea. Also with Cappadocia and Armenia the Sinopians could easily enter into commercial relations.

The mention of Sinope leads to the remark, that the undisturbed pursuit of land-commerce between India and the countries situated on the Black Sea, must have depended from their relations to the Roman Court. Were their relations to it of an inimical kind, interruptions necessarily occurred; the latter however must have terminated as soon as these countries became subject to the sceptre of the Roman emperor. The interruptions of this kind which was the longest and most consequential took place under the king of Pontus *Mithridates Eupater* or the Great, and is the only one which deserves a short mention, because with the end of his dominion every successful resistance to the power of the Roman emperor ceased. Mithridates had subjugated to himself many Scythian peoples, Kolchis, the Bosphoros or the Crimean peninsula and the greatest portion of Asia Minor. After his unfortunate third war with Rome and after the revolt of his son *Pharnakes* in the year 63 B.C., he caused himself to be killed. With his fall his ancestral kingdom lost its independence and thenceforth Roman dominion reigned without resistance in the whole of Asia Minor. As Mithridates was an implacable enemy of the Romans and reigned over Sinope and the ports of Kolchis, there is no need of an express reason for the assertion that as long as Mithridates remained in possession of these towns, the commerce between them and the Roman provinces must have been interrupted. From the subjugation of Asia Minor it follows, that already before the year 57 B.C. with which year the period of

¹ See *Fragm. of Manethon* in C. Mueller's *Fragm. Histor. Græc.* III, p. 614.

Indian commerce now engaging our attention begins, the merchants who carried on the trade between the west-Roman countries and India, could securely carry on their peaceful avocations.

After the statements and explanations of the reports of Indian commerce with the Roman empire, first the influences must be considered, which this commerce has exerted on the state of the Indians and of the Romans. I say of the Romans, for, only of them, and not of the many peoples who obeyed the dominion of the Roman emperor, such influences can be pointed out, inasmuch as they did not take place in the domain of science. The scholars, namely those who made use of the reports they had received from India, in order to develop the geographical and natural historical sciences, lived in various provinces of the Roman empire, and of them, the greatest number consisted of Hellenes.

To the present research, I premise the general remark, that in the present case the question cannot be of one of the most beneficent effects of commercial intercourse between various nations—of the smoothing away of their peculiarities which can only take place through commercial intercourse, and their approach to each other brought on thereby—because the Romans and the Indians dwelt too far from each other, differed from each other too much in customs, manners and opinions, and lastly the number of the merchants pertaining to both nations was too small to produce actual alterations in the circumstances of one of the two nations. In this research two circumstances must be considered : the character of the Romans and of the Indians ; further the nature of the wares, which formed an object of commerce between them. To begin with the Romans ; at that time the simple manners and strict virtues of earlier times had disappeared, and in their stead, lasciviousness, looseness of manners, miserable love of pomp, and boundless extravagance prevailed. The proud, rich and noble Romans vied with each other in luxury and in scorning money, nor had the Plebeians

shunned these inclinations.¹ The Romans caused from all countries objects to be brought which they needed for the satisfaction of their pomp, and luxurious life; and in this respect Rome may be compared with London where products serving for food, raiment or pleasure of the inhabitants are imported from all the countries of the world. But as India presented to the Romans a great variety of precious stones, perfumes, spices and fine stuffs, it contributed considerably to satisfy the voluptuous and extravagant inclinations of the Romans, and had to that extent contributed to the increase of immorality, which was one of the most important causes of the fall of the west-Roman empire.

A second sequel of Indian commerce was the enrichment of that portion of the Roman mercantile community which pursued this business and derived immense profit from it, of which several examples have been mentioned in the preceding history of commerce. It enriched itself however at the cost of the other pursuits of life and escaped not the censure of that strict moralist Pliny, who, whilst praising the care formerly bestowed on agriculture, complains, that the seas were so to say defiled by merchants impelled by temerity and covetousness bringing far away from the Red Sea and India, costly wares subservient to the lust of pomp.² A further sequel of Indian commerce was that India swallowed not less than 12,650,000 Thalers from the Roman Empire.³

As subordinate consequences of the commercial intercourse between India and the Roman empire the two following may be considered. Besides the *Panicum Italicum*, also a kind of figs⁴ was brought from India and sold to the Greeks and had received the name of the *Indian ones*. The second consequence of this intercourse meets us in the domain of medical science. The Roman

¹ An example of this occurs above p. 20.

² XIV, 5, 5 and XXII 6, 1 and 2.

³ Pliny VI, 21, 6.

⁴ Cf. I, p. 248. Note 3, and *Athenaios*, pp. 55. 59, where also *Euthydemos* is mentioned as the authority.

Physicians not only used several products of India to prepare medicaments from them, as has been mentioned already on several occasions, but they also appropriated themselves several medicines used by Indian physicians. A black eye-ointment was called the *Indian Basiliko* (mentioned also by Arab doctors E. R.) and a plaster was likewise called the *Indian plaster*. These prescriptions and their preparation *Thrasos*, a surgeon, who either received them from Indian physicians who had come to the Roman empire or who had himself been to India, had made known.¹ On the other hand *Indian stone* worn by some to quench the blood flowing from hæmorrhoids, which the celebrated Greek physician to whom we are indebted for this statement justly rejects, cannot be considered as a real remedy.² It was no doubt an imitation of the Indian custom of wearing amulets as a protection from disease.

As far as the Indians are concerned their mode of living was, since a long time, regulated by laws and customs; their country presented them also with a number of objects required for their food, raiment and ornament. Accordingly the articles imported to them from foreign countries may be considered only as supplements to those of their own, when they did not exist in sufficient quantity. This holds good, especially of copper, lead, and tin, of a product not indigenous in India, namely of wine, it has been remarked that probably kings and emperors alone used it.³ Therefore it is incredible that commercial intercourse with Greeks and Romans should in any way have altered the manners and customs of the Indians. The goods sold by the Indians to the subjects of the Roman empire were of much higher value than those which they received from those foreigners. It was in necessary consequence of the very different value of the wares on the two sides, that the Roman merchants were obliged to bring much ready cash, because the amount of the

¹ *Galenos. De. compos. medic. sec. locos* XII, 782 and *De. compos. medic. per genera*, p. 741, ed. Kuhn.

² *Gabnosi. De. simplic. medic. tenpor.* XII, p. 227, of the same ed.

³ See above, p. 50.

goods which they sold was insufficient to purchase full cargoes of costly Indian merchandise. In the *Periplus* of the Red Sea on several occasions coins are mentioned as articles of importation.¹ In his time the sum of money brought by merchants from the Roman empire had increased considerably; the report of Pliny has been already adduced before.² Thereby the Indian merchants came into possession of numerous foreign coins, which probably became current also in India and were propagated from Indian ports also into the interior. The Alexandrian merchant who gives us such accurate elucidations on the Indo-Roman commerce of those times informs us also on this point. In Barygara he yet found drachms of the Greek-Bactrian Kings, *Apollodotos* and *Menondros*, in use.³ Herewith the phenomenon agrees that in the most distant places of anterior India Greek and Roman coins have been found, namely in the tope near Hidda in Kabulistan in the vicinity of Jellalabad, in the tope of Manikyālā, in the Mahratta country, in the region of Koimbatoor, in southern Dekhan and in the ruins of an old town, Mantotte in Ceylon.⁴ These coins gave, for the time in which they were coined, a hint for determining the greater or lesser vivacity of the Roman-Indian commerce. It is admitted of course that if Roman coins of the time of the Roman republic have been found in India, they cannot demonstrate that already during the time of the republic a direct commercial intercourse had taken place between Rome and India, because coins of this kind were, with later ones, brought to India by Roman merchants. Most frequently they are of the emperors from Augustus till the times of the Antonines, many of whose coins have been discovered in the ruins

¹ See above, p. 53.

² See above, p. 4.

³ *Periplus Mar. Erythr.*, p. 27.

⁴ *Wilson's Ar. antiqu.*, pp. 36 and 108, and on the site of Manikyālā cf. II, p. 1177, Note 2; then *Remarks on some lately discovered Roman Gold Coins* by Capt. Drury in the *J. A. S. B.* XX 1, p. 371, foll and Sir Alexander Johnston's *A letter to the Secretary*, etc., in *Trans. of the R. A. S. I.*, p. 846.

of ancient town near Mantotte in Ceylon. Accordingly they bear testimony, that from the beginning of the Christian era till the end of the second century the intercourse between the Roman empire and India was most flourishing ; it, however, continued even after the division of the Roman empire and still maintained itself during the Byzantine empire, because coins of *Theodosios* the first, of *Markianos* and of *Leon* have been found in Malabar, the first of whom began his reign in 407, and the last died in 471. As the history of the Byzantine-Indian commerce cannot be here pursued further, I content myself to point to this circumstance as a preliminary.

If we remember the wide extent of India, its wealth in costly products and its high prosperity at that time, we must perceive that the money introduced into India through commerce with the Roman empire, could be but a small contribution to the enrichment of the inhabitants. On the other hand they obtained with it, during the time of the expansion of the Roman-Greek commerce, a communication of another kind which may here be mentioned, although it properly belongs to the history of astronomy, I mean, the division of the year into weeks and the naming of the separate days thereof according to the seven planets. The earliest well-authenticated mention of this division is of the year 63 B.C. in which Pompey found it in use among the Jews at the taking of Jerusalem.¹ It is based on the circumstance that the 24 hours of the day are dedicated to the seven planets in the following order : Saturn, Jupiter, Mars, the Sun, Venus, Mercury and the Moon. According to this distribution, if we begin with Saturday the holiday of the Jews, the 22nd hour will belong to Saturn, the 23rd to Jupiter, the 24th to Mars and the first of the next day to the Sun, by whose name the whole day is called. If we continue in this manner through the whole week, we obtain the names of the separate days of the week, as current among all nations, among whom the division of the year into weeks is customary. This nomenclature is ascribed

¹ *Diocassius* XXXVII, 16, 18 and 19.

to the Egyptians and was very ancient among them. To the Greeks and Romans it had been communicated by the Egyptians. The oldest mention of these names of the week occurs in the writings of *Varāha Mihira*, consequently, only in the beginning of the sixth century.¹ Herefrom it does not, however, follow that these names of the days of the week had with other astronomical doctrines, not already found admittance among the Indians, but it might have been accepted only in daily life, not in the ritual, in which the original Indian division of the month into a light and dark half continues to subsist.² From India, the week with its seven days named after the seven planets has been carried to Java.³ But as it had first originated in Egypt, there can scarcely be a doubt that the Indians had received them from the merchants who visited their country for the sake of commerce.

On the other ramifications of the commerce of the Indian with foreign countries we possess only isolated notices.

The third of the three routes which branched off in Bactria from the great high-way leading from India, passed over the great separating mountains the Belurtag, extended as far as the country of the *Serike* which embraced East Turkistan, the desert Shamo or Gobi* and Tibet proper. The Roman merchants went as far as the town *Sera*,† either Hami or Turfan.⁴ From here goods were brought across Bactria to the port *Barbarikon* on the mouth of the Indus.⁵ The commerce

¹ Weber's *Ind. & Stud.* II, p. 666.

² Cf. I, p. 823.

³ The earliest indication on these Javanese names occurs in the *Aant ceh. keeningen & J. Domis* in the Transactions of the Batavian Society of Arts XIII, p. 339, foll. These were afterwards communicated in *The History of Java* by S. Raffles, I., p. 1175, in *The Hist. of the Ind. Archipel.* by J. Crawford, I., p. 293. Lastly in R. Friederich's *Voorloopig Verslag Vanke Eil. land Bali* in the first mentioned collection XXIII, p. 21.

⁴ See II, p. 535.

⁵ *Peripl. Mar. Erythr.*, p. 22.

* [Schoff., p. 261.—Trs.]—[Gerini, 2, 249.—Trs.]

† [Schoff., p. 269.—Trs.]—[Gerini, pp. 15, 16, 17, 19, 21, 738½.—Trs.]

of the Serd, by which name the Greeks and Romans call the merchants from whom they received the so-called Seric goods, which name was, however, afterwards also transferred to the peoples who inhabited Serike. *Pliny* gives us a short but extremely interesting report so far as the history of commerce is concerned.¹

There existed a commercial intercourse between the Serd and the inhabitants of Taprobane. The father of *Rachias*, the director of the embassy of the Singalese king to the emperor *Claudius*, had himself travelled to them and had reported of them the following remarkable circumstances :— The Serd dwelt on the other side of the Emodian mountains, by which name the middle part of the Himalayas is understood. They surpassed other men by the size of their bodies, had reddish hair and sky-blue eyes. Their language had coarse sounds, and was unintelligible to foreign merchants. They came to meet the Roman merchants as well as the father of *Rachias*; there the foreigners deposited on the other bank the articles of commerce brought by them, by the side of those offered to them for sale by the Serd; the latter carried off the foreign articles if they were pleased with the Carter. They hated luxury and covetousness and cared not what the foreign merchants sought among them, nor why they came, and where they carried the Seric goods. On account of this want of the love of gain and on account of their simple manners, they are, by the Roman geographers, designated as a very just nation, and stated to have become greatly known by the trade which they carried on in this manner by depositing articles in solitary places and then departing.²

This description of the Serd preserved to us by *Pliny* best suits the *Usun* who belong to inner-Asia, had, according to the Chinese reports fair hair, blue eyes, and were not driven to the west by the great *Jueitchis*, and possessed, according to the statement of a Chinese official in the year 113 B.C. the region

¹*Pliny* VI. 24, 8.

²*Pomponius Mela* III, 7, 1.

at present called *Dsungary*.¹ The river not mentioned in Pliny's account must be the stream called *Óichardos* by Ptolemy, the present *Tarim* and one of the towns situated in the great high-way through upper Asia, namely Turfan, belonged to Usin.² Accordingly I do not hesitate to assume that the Serd mentioned in the passage of Pliny are no other than the Usuns. Short as this information is, it nevertheless throws a bright light on the great commercial intercourse, during those times, among the most distant nations. From the capital of the Roman empire situated in the far west, and from the island Taprobane situated in the south of India, merchants visited inner-Asia.

Of the land commerce of the Indians with China, the most distant country of eastern Asia, a short already explained notice occurs in the *Periplus of the Red Sea*.³ Annually Indian merchants visited the frontiers of the *Thinai* * on the route through Sikim along the Tista, and procured on their return from the *Besadai* the Malabathron†, which they brought to the port *Gange* at the mouth of the Ganges.

¹ Ritter's *Asien*, V., p. 613 ff. and Vivien Saint Martin's *The White Huns*, cf. p. 33.

² See II, pp. 533 and 555.

³ See above, p. 38

[* Gerini, pp. 238, 239, 249, 276.—Trs.]

[† Schoff, pp. 6, 44—5, 47, 84, 89, 112, 216, 7, 756, 279, 281.—Trs.]

