



Geography and commerce.

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GEOGRAPHY AND COMMERCE.¹

By GEORGE G. CHISHOLM, M.A., B.Sc.

THE subject which I have chosen for this address is one that is very apt to raise questions that might lead to keen and even warm controversy. For the raising of such questions no occasion could be less suitable, and it will therefore be my endeavour to handle the subject in such a manner that burning questions may be altogether avoided. For that reason I propose to consider the relations of geography and commerce from an historical point of view, which at least gives one the opportunity of confining oneself to less debatable ground than is entered on when one ventures on prophecy, that "most gratuitous form of error," as it is styled by George Eliot. That I shall be able to keep wholly free from debatable matter is more than I can hope, but it is my intention to try to avoid it as much as possible by illustrating my subject chiefly by reference to the broad, familiar facts of commerce considered in the light of geographical and other implications that may be described as obvious—obvious, and yet perhaps not unimportant and not unworthy of having attention specially called to them; for, after all, the obvious is obvious only to those who are looking in the right direction and with the proper focus, not to those who are looking another way or far beyond what is immediately before them.

As the first of these obvious considerations I may point out that unquestionably the foundation of commerce is the mutual advantage to be derived from the exchange of commodities produced in different places. Geographical relations are therefore of necessity implied in commerce. But those who carry on commerce have always aimed at the greatest possible advantage to themselves, and the commerce that

¹ Presidential Address to Section E (Geography), delivered at the Leicester Meeting of the British Association.

has always attracted the greatest attention is that which has resulted in the greatest additions to their wealth. Peculiar importance therefore belongs to the geographical relations between regions which under any given circumstances lead to the most profitable exchanges.

But before applying this consideration there is another point which must detain us a little. In speaking of wealth as I have just done I am aware that I have made use of a term which economists recognise as one requiring a great deal of exposition to prevent misunderstanding, and there is not the slightest doubt that in the history of commerce it has led to great misunderstanding, and therefore it is necessary, without entering upon an economic disquisition on the subject, to consider the meaning of the term "wealth" sufficiently to indicate the way in which that misunderstanding has arisen. For this purpose it will be most convenient not to give one of the highly abstract definitions of wealth which a modern political economist will give us, but to go back to the more concrete considerations set forth by Adam Smith, who tells us that "the wealth of a country consists not in its gold and silver only, but in its lands, houses, and consumable goods of all different kinds."¹ Now no definition of wealth is given by economists which excludes this last form of wealth, but the misunderstanding to which I refer arises from the fact that this form of wealth is apt to be overlooked. It may happen that a country or region produces a great abundance of consumable goods in proportion to its population, and hence from this point of view be entitled to be regarded as wealthy, and yet may not be a country or region that attracts much attention by its wealth. What has always attracted attention to wealth, and what has caused wealth to have an important effect in directing the main streams of commerce, and commerce to have an important effect, direct or indirect, on history, has been the accumulation of much wealth in few hands, so that a comparatively small number of people in a community have enjoyed, directly or indirectly, the command of a great deal of labour, have had the means of providing themselves with commodious and luxurious houses, with a variety of other comforts, luxuries, and splendours, and over and above that the means of so directing labour as to add still further to their wealth. Such conditions may exist where the great bulk of the population are extremely poor.

Now, it happens that wherever a great abundance of consumable commodities is produced on a relatively small area there is always in that area a greater or smaller number of individuals in whose hands much wealth is concentrated. It is for economists to explain how this comes about, or has come about, but it is a fact of the utmost importance for geographers to bear in mind in considering the relations of commerce and geography.

The existence of a relatively dense population may be due to different causes, such as a great abundance of agricultural products, the carrying on of mining or manufacturing industries, the concentration of the administration of a great dominion, or the pursuit of commerce

¹ *Wealth of Nations*, book iv. ch. i.

itself. Where it is due to any cause but the production of great quantities of the necessities of life, foodstuffs must be imported in large quantities, and where the pursuit of manufactures is the cause, or one of the chief causes, then the importing of raw materials is entailed. Where these are most advantageously found there also much wealth is likely to be accumulated in few hands.

Further, it is to be noted that where a comparatively small number have the command of much wealth there is sure to be a demand for things of such value that they can be bought only by the wealthy, things that are more or less rare, such as precious metals, jewels, gems, ivory, fine woods, ornamental skins and feathers, manufactured goods of rare materials or of fine quality, as well as, in many places and in most periods of history, slaves. Such trade is necessarily limited in amount, but puts great profits in the hands of those who carry it on with success, and for that reason attracts attention.

With this class of goods may be associated certain others that may be regarded as intermediate in position between those which are bought only by the wealthy and those which are not merely generally consumed but also very widely produced. Amongst these may be mentioned salt, the consumption of which is universal, but the production of which, away from the seaboard of the warmer latitudes, though in a sense widespread, is strictly confined to scattered spots. A more interesting example is that of spices, one of which, pepper, has from a remote period been very generally consumed, but in still smaller quantity than salt, and for that reason has been able to bear still higher transport costs. For ages these costs were very high, for various reasons, amongst which were risks both numerous and great, but the profits of those who were successful in the trade were proportionately high.

Peculiar importance in commercial geography is thereby given to the relations between the regions that yield or yielded spices and those in which they were consumed at a great distance from the place of origin, and one of the most important facts in human history is that for many hundreds of years an extremely valuable trade in these commodities was carried on between India and the Mediterranean. Spices no doubt were less talked about, less prominent as symbols of wealth, than gems and jewels, fine woods and ivory, but they formed the basis of a larger trade, which was in the aggregate probably more profitable than that in the still more costly wares.

The geographical relations between India and the Mediterranean necessarily determined the routes followed by this traffic. These routes were singularly few. They were practically confined for the most part to minor variations in two main routes, one by way of the Red Sea, the other by the Persian Gulf. At more than one period of history, in very early times in the days of the splendour of Assyria and Babylonia, and again in the flourishing days of the Caliphs of Baghdad, the Persian Gulf route had a peculiar advantage in the existence of the large and rich populations that afforded an intermediate market; and another important fact in the relations of geography and commerce, one that has had vast effects on human history, is that the physical conditions of the

area between the head of the Persian Gulf and the Mediterranean are, and throughout human history have been, such as to make the most convenient outlet of that route some point or points on that seaboard which in ancient times was known as Phœnicia. Between that seaboard and the Euphrates the desert is sufficiently narrowed to be most easily crossed. The most favoured outlets on this seaboard were not always the same. They varied in different circumstances which gave a different geographical value now to one point, now to another. But on these variations, interesting and instructive as they are from a geographical point of view, there is no time to enter on this occasion, and it will be enough to call attention to a very interesting paper by the late Elisée Reclus, entitled "La Phénicie et les Phéniciens," dealing with this and other matters connected with the geographical basis of Phœnician commerce and industry—a paper too that is apt to be overlooked, inasmuch as it was contributed by him with a generosity characteristic of one of the least self-seeking natures with which the world was ever blessed to a rather out-of-the-way publication, the *Bull. de la Soc. Neuchâteloise de Géog.* (vol. xii. 1900). But while I do not desire to enter into details regarding the Phœnicians it is necessary to point out how naturally and indeed inevitably this position of the Phœnician cities between the Mediterranean on the one hand and Mesopotamia and the Persian Gulf route to India on the other hand brought other sources of wealth in its train. Conveniences for the distribution of manufactured goods have always been one of the most important advantages for the development of manufacturing industry, and the wealthier the community forming the market for the products of such industry the more valuable are the manufactures likely to be. Hence the Phœnician manufactures of fine linens and woollens richly dyed, glass and metal wares, for which other parts of the Mediterranean and its seaboard furnished the raw materials, slaves to do the manual labour, and food for that population which the narrow strip of Phœnicia could not adequately supply. Food is indeed a bulky commodity, but even bulky commodities could be transported by sea at a relatively small cost, and in connection with this traffic we must note the indirect effect which the wealth of Phœnicia must have had in promoting the settlement of districts favourably situated for supplying food, and especially of such districts where the opportunities for producing food were great, but not fully turned to account, where the supply therefore could easily be made superabundant in proportion to the wants of the population. This shows that from the very nature of commerce its benefits are not confined to one side. Although the geographical conditions for a long period of time led to a special accumulation of the wealth due to commerce in Phœnicia, Phœnician trade promoted the growth of wealth and civilisation elsewhere. The Greeks of the Ægean distinctly recognised what they owed to the Phœnicians, and they in their turn derived much wealth from Eastern trade, even though not so directly as the Phœnicians, and they in their turn derived some of the food for a commercial population from the far west—from Syracuse, Sybaris, and even the distant Kume. But the far east had a peculiar

fascination. As the articles from which much of the wealth of commerce was derived originally came from India, it was natural that the idea should arise that India was a wealthy country, a country well worth possessing. I am not aware whether India ever was in historical times a wealthy country in the sense of producing a great abundance of the necessaries and ordinary conveniences and comforts of life in proportion to the population, but if it was not rich itself it was at least the means of making others rich. There can hardly be a doubt that the desire of possessing this country of real or imagined wealth was prominent among the motives that led Alexander the Great to embark on that enterprise which had such surprisingly—one might almost say miraculously—widespread, profound, and lasting effects on the history of the Near East. If we may accept as historical the speech in which Quintus Curtius represents Alexander as having addressed his troops after his victory over Porus, in order to encourage them to advance further into India, that speech affords fairly strong evidence of what has just been stated. "What now remained for them," said Alexander, "was a noble spoil. The much-rumoured riches of the East abounded in those very regions to which their steps were now bent. The spoils accordingly which they had taken from the Persians had now become cheap and common. They were going to fill with pearls, precious stones, gold, and ivory not only their private abodes, but all Macedonia and Greece."¹ Alexander was no merchant. Pepper was beneath his notice. His symbols of wealth are those which have always most powerfully affected the imagination. Later on, however, we shall meet with a king who was a merchant, and who understood perhaps better than Alexander wherein consisted the value of Indian trade.

At the outset of his career Alexander had destroyed Tyre, thinking, no doubt, that he had thereby wiped away the claims of one rival for a share of the wealth of the East; but it is a noteworthy fact that he did not thereby destroy the value of the site of Tyre under the conditions which then subsisted. Tyre revived and again obtained wealth from its trade with the East, as it did again and again in subsequent history. A heavier blow to Tyre than its mere destruction was the ultimate accomplishment of Alexander's idea for founding a great seat of commerce on the harbour which he saw could be created in the neighbourhood of the Nile delta. The foundation of Alexandria and the successful efforts of the successors of Alexander in Egypt to divert a large part of the trade in spices and other Oriental goods to the Red Sea route for the Mediterranean did more than a single act of war to deprive Tyre and other Phœnician cities of the peculiar pre-eminence which they had long enjoyed in the trade of those wealth-bringing commodities.

But perhaps the history of Venice shows even more clearly than that of Tyre the importance of this eastern trade in connection with certain inevitable geographical relations. The foundation of the future commercial glory of Venice may be said to have been laid when Rome

¹ J. W. M'Crindle, *The Invasion of India by Alexander the Great* (1893), p. 215.

planted her colonies north of the Po. The gradual clearing of forests gained for agriculture to a greater and greater extent one of the most favoured agricultural areas in Europe. There resulted a superfluity of agricultural products which begot a trade by sea. The great outlet of this plain in Roman times was Aquileia, which in the beginning of the fifth century, when no one of discernment could imagine that there would ever be other than Roman times, was described by a Roman man of affairs and minor poet as one of the nine great cities of the world. But before that century was out Aquileia was destroyed, never to recover. The value of its site was replaced, and that in a strange way, which no man of discernment could ever have foreseen. The time that saw the destruction of Aquileia and the times that immediately followed were such as made safety a prime consideration, especially for all who possessed or desired to possess wealth. Refugees from Aquileia, and afterwards from other Italian cities, thought at first of nothing but safety. Many of them found it on a few muddy and sandy islands near the muddy shores of the lagoon in which Venice now lies. But here they found the means of trade. The sea could be made to furnish both fish and salt, and the rivers that flowed into the lagoon enabled them to exchange these commodities for provisions of other kinds which the adjoining land could supply. Gradually this commerce grew, until in the eighth century we find the Venetians trading with Syria and Africa, Constantinople, and the ports of the Black Sea.

Throughout the period of growth the policy of this trading republic, both by land and sea, is very significant. Venice early realised the force of Bacon's maxim "that he that commands the sea is at great liberty, and may take as much and as little of war as he will." Power at sea was necessary to provide security for her commerce. In early times she generally owned allegiance to the Eastern Roman Empire, a suzerainty which could do her little harm and could and did do her much good. To that allegiance she adhered until she was strong enough to turn against and reap advantage from the overthrow of her suzerain. At an earlier date, before the close of the tenth century, she had conquered Dalmatia, and thereby destroyed the hordes of pirates who had found refuge in the innumerable harbours of that coast and constantly harassed the commerce of the Adriatic. At every opportunity she secured establishments and acquired possessions in the Levant.

On the land side, however, dominion would have added more to her risks than her advantages, and that dominion was not sought. For more than eight hundred years after the first flight to the islands of the lagoon, more than six hundred after the election of the first Doge (697), Venice possessed no territory on the mainland beyond a mere narrow ribbon on the edge of the lagoon. The nature of the situation made her indispensable to the trade of the land immediately behind. An incident belonging to the close of the ninth century illustrates the force of this observation. A keen dispute had arisen between the Patriarch of Aquileia and the Patriarch of Grado. Venice supported the Patriarch of Grado and war seemed to be threatened. But so necessary had the commerce of Venice become to the inhabitants of the territory acknow-

ledging the authority of Aquileia that in order to bring about the submission of the Patriarch of Aquileia it was enough to close or blockade the port of Pilo, on the mainland opposite the *lidi*. The subjects of Aquileia then forced the patriarch to sue for peace.¹ On another occasion, in a dispute with the Bishops of Belluno and Treviso, the matter was again partly settled through the efficacy of the measures taken by the Doge Orseolo II., with the consent of the people, to stop commerce with the territory of the bishops, by which the inhabitants found themselves without supplies of salt, and without the means of exchanging their leather and meat for Venetian wares or selling the abundant timber of their forests for the building of Venetian ships.² In holding the outlets for maritime commerce, Venice felt herself to be in the possession of "the keys of trade," to use the expression employed by Sir William Petty in speaking of the analogous position of Holland in later times at the mouths of the Rhine, Meuse, and Scheldt.

But while possession on the mainland was not necessary to Venice she always recognised and sought the advantage of good relations with the occupants of the plains behind her, whoever these occupants might be, and on every occasion endeavoured to turn to her own benefit the vicissitudes of those plains. In her earlier days she is found now in alliance with the Greeks, now with the Pope, now with the archbishops of Ravenna, and now with the Lombards, just as it happened to suit her interests, and in any case taking every opportunity of obtaining direct and indirect advantages from trade with the most profitable customers in the plains. When famine pursued the steps of the Lombard invaders of Italy in the sixth century, "the Venetians in their pacific retreat," says Mutinelli,³ "could send their ships to the ports of Apulia and elsewhere to obtain victuals and corn for the famished barbarians," and in consequence the Lombards took them under their protection and granted them security and favours throughout the Lombard kingdom. When Charlemagne, at the invitation of the Pope, invaded Italy to deliver the Church from its subjection to the Lombards, Venetian traders promptly appeared in the camp of the Franks at Pavia and sold to the Frankish chiefs all the riches of the East—Tyrian purples, the plumage of gay birds, silks, and other ornaments, pranked in which the purchasers stalked about in their pride, feeling, no doubt, that now at last they had conquered a land whose wealth would reward all their labours and hardships.⁴ Charlemagne, it is true, was inclined to look with little favour on the Venetians, whom he regarded as supporters of the Greeks, but an attack by his son Pepin in 809 on the islands of the lagoon only served to establish the strength and security of their position, at least on the inner islands of the lagoon. By closing the passages of the canals, removing the navigation beacons, and fortifying and barring the chief entrances to the land they succeeded in holding out during a siege of six months, till the heats of summer began to decimate the troops of Pepin,

¹ Romanin, *Storia documentata di Venezia*, vol. i. pp. 197-8.

² *Ibid.*, pp. 270-1.

³ *Del Commercio dei Veneziani*, p. 12.

⁴ *De rebus bellicis Caroli Magni*, L. iii., quoted by Romanin, as above, vol. i. p. 130.

who, on hearing also of the approach of a Greek fleet, came to terms with the Venetians on conditions similar to those which had been maintained with the Lombards. The Venetians agreed to a tribute, but solely for the narrow strip of territory held on the mainland and in return for commercial privileges in the Frankish dominion, not for any recognition of the existence of the State. The tribute was afterwards paid or withheld according to the power which the emperors showed of enforcing it; but one permanent result of this incident was that the Venetians, perceiving the smaller security belonging to the islands nearer the mainland, of their own choice made the Rialto the capital of their little State.¹ (810).

As a last illustration of the nature of the relations of Venice to the North Italian plains, we may refer to some of the points mentioned in a celebrated and often quoted address delivered to the principal senators of Venice by the Doge Mocenigo just before his death (1423), at the time at which Venetian trade was at the very height of its prosperity. At that time Venice was in possession of a considerable tract of adjacent territory on the mainland, and there was a party favourable to further action on the part of Venice against the growing power of Milan. The aged and sagacious Doge feared that this party was going to gain the upper hand and elect as his successor Francesco Foscari, who, he thought, would involve them in dangerous and disastrous as well as useless enterprises. The immediate occasion of the conflict of views in the Venetian Senate was a request of the Florentines for support against alleged designs of the Duke of Milan. Mocenigo, however, not only warned the senators in the most earnest and urgent language against Foscari personally, but also advised them against the particular enterprise, maintaining that it was of no consequence even if the Duke of Milan made himself master of Florence, since the artisans of Milan would continue to send their manufactures to Venice, and the Venetians would be enriched to the loss of the Florentines. He then went on to give particulars of the trade of Venice at that time, dwelling specially on the value of that with Lombardy. To Lombardy alone, it appears, Venice sold every year cloths to the value of 400,000 ducats, *tèle* (? linens) to the value of 10,000 ducats: wools of France and Spain to the value of 240,000 ducats, cotton to the value of 250,000 ducats, wine to the value of 30,000 ducats, cloth of gold and silk to the value of 250,000 ducats, soap to the same value, spices and sugar to the value of 539,000 ducats, dye-woods to the value of 120,000 ducats, other articles 110,000 ducats: in all, goods to the value of more than 2,500,000 ducats, the profit amounting to quite half a million ducats. With the exaggeration that comes natural to a lover of his country, Mocenigo goes on to say rather grandiloquently that to the Venetians alone land and sea were equally open; to them only belonged the carriage of all riches; they were the providers of the entire world.

All this trade, as well as that of Genoa and other Italian ports which shared with others in the spice trade, must have had a remarkably fructi-

¹ Romanin, as above, vol. i. pp. 144-9.

fyng effect in North Italy generally. Agriculture and manufactures would be alike promoted, and in consequence of that the growth of population; and when war, with its attendant scourges, led to a diminution both of industry and population, this commerce could not fail to assist in bringing about a speedy recovery. It has already been hinted that in manufactures both Milan and Florence took a prominent place in the time of Mocenigo. In truth, manufactures in both cities are of much older date, and it may be interesting to mention here that even in the thirteenth century English wool was a commodity sufficiently valuable to bear the cost of transport to Florence. A letter has come down to us,¹ dated London, January 6, 1284, from the representative of a Florentine house, giving particulars as to purchases that he had made, in many cases for several years in advance, of all or a portion of the wool of many English monasteries from Netley and Titchfield, in Hants, and Robertsbridge in Sussex, to Grimsby, in Lincolnshire, and Sawley, on the Ribble, in the county of York (one of these monasteries, you may be interested to learn, as near Leicester as Monks Kirby, about midway between Rugby and Nuneaton), and from the work in which this letter is published we also get particulars² as to the cost of conveying wool from London by way of Liborné to the Mediterranean port of Aigues Mortes in the same or the following century. Florence, indeed, depended on England, Spain, and Portugal for wools of fine quality, its own and other wools of Italy being of very inferior value, so that when four bales of English wool were worth in Florence 240 gold florins, the same quantity of wool of Garfagna dell' Aquila was worth only forty florins.³ The author of this work adds that he has found no indication of the prices of the wools of Spain and Portugal in Florence. Besides manufacturing cloths from the raw material, "Florence carried on a large trade in dressing and finishing woollens manufactured in Flanders and Brabant, and brought to Florence either by way of Paris and the Saône-Rhône valley or by way of Germany and across the Alps. In the time of Mocenigo many of these products of Florentine industry came to Venice for export. In the address already referred to, Florence is said to have sent to Venice every year 16,000 pièces of cloth, which were sold to Aquila, Sicily, Syria, Candia, the Morea, and Istria.

It will be noticed that in the address above quoted Mocenigo lays no special stress on the spice trade, but there is not the slightest doubt that spices were amongst the most important commodities with which

¹ Published (1765) in a work having no author's name, but stated in the British Museum Catalogue to be by G. F. Pagnini della Ventura, and bearing the title *Della Decima e delle altre Gravzze della Moneta, e della Mercatura de' Fiorentini fino al secolo XVI.*, the third volume of which contains *La Pratica della Mercatura* of Balducci Pegolotti (ascribed to the first half of the fourteenth century), under whose name the work is entered in the British Museum Catalogue. The date of the letter is given on p. 94 of vol. ii., and the letter itself on pp. 324-7 of the same volume. For the identification of the names of monasteries in their much-disguised Italian forms and spelling, I am indebted to my friend, Mr. A. B. Hinds, M.A., editor of the last-issued volume of the *Calendar of State Papers (Venice)*. Most of them, however, are entered and identified in the list given from Pegolotti on pp. 629-41 of Cunningham's *Growth of English Industry and Commerce, Early and Middle Ages*, 4th edition (1905).

² *Ibid.*, vol. iii. pp. 261-3.

³ *Ibid.*, vol. ii. p. 95.

the Venetians provided a large part of the western world. Just as nowadays the large trade of Britain in bulky goods makes of this country a great *entrepôt* for the more valuable and less bulky, so in Venetian times the exceptionally large population behind Venice receiving and supplying the bulky goods thus fed the shipping which brought to Venice a much larger proportion of the more valuable goods of the East than was brought to other ports. But there is plenty of direct evidence of the importance of Indian trade to Italy in the Middle Ages. It is to be remembered that of necessity this trade enriched other countries before it reached Venice, and in proof of its importance in the Mediterranean generally one may call attention to the investigations of the Venetian Marin Sanuto Torcello about the end of the thirteenth century, who, we are told, saw with indignation that the defeats of the Christians in Palestine were specially due to the power of the Soldans of Egypt, and perceiving that their great power derived its nourishment from the commerce with the Indies, based on that observation the projects which he urged on Christendom for the overthrow of that power. It is further significant that a sea way to India should have been sought by Genoese as early as 1291,¹ and even more significant that, a century later, Venice should have found it worth while to maintain a consul in Siam.²

But the clearest evidence of the supreme importance of the Indian trade to the Italian cities is to be found in the results of the discovery which finally diverted from Venice and the Mediterranean the great bulk of the Indian trade until that trade had lost all the special significance which it had retained for thousands of years. It need hardly be said that I refer to the discovery of the sea way to India by the Portuguese in 1497-99. Of the feeling aroused in Venice by this discovery Romanin has reproduced,³ from the *Diarii* of Priuli, an interesting contemporary record, written with reference to a despatch to the Doge, probably from Pietro Pasqualigo, a Venetian envoy at Lisbon at the time of the return of the second Portuguese voyage to India under Cabral. The letter is stated to have reached Venice on July 24, 1501. After giving the letter, in which we are told, among other things, how the Portuguese had charged their ships at Cochin with spices at a price which the writer feared to mention, Priuli adds: "On the arrival of this news at Venice all the city was deeply moved and remained stupefied, and the wisest held it for the worst news that could reach them. For, it being recognised that Venice had risen to so high a degree of renown and wealth solely by the commerce of the sea and by navigation, by means of which every year a great quantity of spices was brought thither, which foreigners then flocked together to acquire, and that by their presence and the traffic they obtained immense advantages, now by this new voyage the spices would be brought from the Indies to Lisbon;

¹ See the account of this attempt, and its results, so far as they are known, in G. H. Pertz, *Der älteste Versuch zur Entdeckung des Seeweges nach Ostindien*, Berlin, 1859.

² Romanin, as above, vol. iii. p. 335, note (5).

³ As above, vol. iv. p. 461.

where Hungarians, Germans, Flemings, and French¹ would seek to acquire them, being able to get them there cheaply; and that because the spices that came to Venice passed through the whole of Syria and the countries of the Soldan, paying in every place exorbitant duties, so that at their arrival at Venice they were so weighted that, what at first was of the value of a single ducat, was raised in the end to sixty, and even a hundred ducats; from which vexations, the voyage by sea being exempt, it resulted that Portugal could give them at a much lower price." So said the wisest, but it is interesting also to note what was said by the less wise. Priuli goes on: "And while the wisest saw that, others refused to believe the story [these, I presume, were the least wise], and others again said that the King of Portugal would not be able to continue this navigation to Calicut, since of thirteen caravels only six had returned safe, the loss would be greater than the advantage, and that it would not be so easy to find men who would consent to risk their lives in so long and perilous a navigation; that the Sultan of Alexandria, seeing the loss of so fine a profit as that obtained by the passage of the spices through his lands, would see to that."

But in this case it happened that the wisest were right. The effects of this discovery were not long in making themselves felt in the notable diminution in the sales of spices at Venice. Under the date February 1504 Priuli enters in his diary, "The galleys of Alexandria have entered into harbour empty: a thing never before seen." In the following month the same thing happened in the case of the galleys from Beirut.² Under August 1506 it is stated that the Germans at the fair of the preceding month had bought very little. Various remedies for these evils were thought of, and among these it is interesting to note that in 1504 the Council of Ten seriously discussed a proposal to empower an envoy to the Sultan of Egypt to come to an agreement with him, if possible, for the cutting of a canal through the Isthmus of Suez.³ But the proposal was not adopted. Other efforts to avert the results of the great achievement of the Portuguese were vain. Other disasters befell the republic about the same time. Not only was commerce taking another direction, but, says Romanin, "the wars of Italy were emptying the treasury, the Turkish power was despoiling the republic step by step of its possessions beyond the sea, and Venice was beginning to descend that incline which was to reduce it to a subordinate position among the powers of Europe."⁴ North Italy generally suffered at the same time. The withdrawal of the greater part of the spice trade, by diminishing the growth of wealth among the inhabitants, made that part of the world a less important market for manufactured goods. Countries outside of Italy, where rival manufactures had already started, were increasing their wealth more rapidly, and thus imparting an increasing stimulus to their manufactures, and these increased while those of Italy

¹ We must recognise with due humility that the English are of little account in Venetian eyes in 1501.

² G. Coen, *Le Grandi Strade del Commercio Internazionale proposte fino dal Sec. XVI.* (Leghorn, 1888), p. 71.

³ Coen, as above, pp. 82-83.

⁴ As above, vol. iv. p. 466.

declined. In 1338 the number of woollen factories in Florence is given at 200, making in all 70,000 to 80,000 pieces of cloth in the year; in 1472 the number of shops or factories had risen to 270, but no estimate is given of the quantity of the product; in 1529, however, the number of shops is said to have sunk to 150, and the quantity of cloth manufactured to 23,000 pieces per annum, and in the time of the editor of Balducci Pegolotti the quantity was only about 3000 pieces annually.¹

Before going further, however, there is one point in the comments on the discovery of the sea way to India quoted above from the *Diarii* of Priuli which calls for notice. Hungarians, Germans, Flemings, and French, he observes, will in future go to Lisbon to get the spices of India more cheaply than at Venice. This remark illustrates the difficulty of shifting the geographical point of view according to circumstances, a difficulty of which at all times abundant illustrations can be offered. The purchasers of spices who come first into the mind of Priuli are Hungarians and Germans. It was inevitable that they should be among the leading customers of Venice. The Hungarians were supplied from the Dalmatian ports which belonged to Venice. The Germans came by way of the Rhine and the Elbe, and then across the Alps to get supplies for central, north-western, and northern Europe. But it was neither Hungarians nor Germans who came in greatest numbers to Lisbon to buy the spices which Portuguese ships brought from the East. In any case Lisbon had no advantages like those of Venice for supplying by land a large and rich population immediately behind it. The valley of the Tagus was small and poor, and had not the capacity for expansion in wealth and population which the Lombard plains had when the commerce of Venice began to grow. The bulk of the spices brought to Lisbon had therefore to reach their final markets by routes that did not pass through Lisbon into the interior. To supply the most important of those markets it was the Dutch, the people who held "the keys of trade" for the important valleys of the Rhine, Meuse, and Scheldt, who came to Lisbon in greatest numbers to buy spices of the Portuguese. And here it has to be added that, in spite of the discovery of the sea way to India, the Venetians continued to retain great advantages in the spice trade with Hungary and parts of Germany, as well as, of course, the northern plains of Italy. Things did not remain always as bad as recorded in the years 1504 and 1506. The Portuguese, while maintaining successfully for a hundred years the monopoly of the trade in spices at the place of origin in the East, found their advantage in dividing the trade with Europe between the sea way and the Persian Gulf route, of which latter route they held the key since the final capture of Ormuz in 1515. The trade by way of the Tigris through Baghdad (the so-called Babylon of those days) and the Euphrates to the old Phœnician seaboard was again revived, and was maintained as long as Portugal held command of the trade. It was by this route that the first English commercial expedition to India, that of Newberie, Leedes, Story, and Fitch, went out in 1583, and by which Ralph Fitch, the sole survivor of that expedition, returned in 1591.

¹ *Della Decima*, as above, vol. ii. pp. 64, 105.

By this route Venice got back some of her spice trade; not perhaps with the same profit to herself as formerly, but still a trade of no slight importance not only to Venice, but also to Augsburg, Nuremberg, and some of the other cities of South Germany.

But beyond doubt the bulk of the trade was now carried on by the sea route, and we are thereby enabled to get a better idea both of the amount and the nature of the trade. On both points we get information from the *Narrative* of the above-named Ralph Fitch, who tells us that "the Fleete which commeth every yeere from Portugal, which be foure, five, or sixe great shippes, commeth first hither [to Goa.] And they come for the most part in September, and remaine there fortie or fiftie dayes; and then go to Cochin, where they lade their Pepper for Portugall."¹ Now in 1583 a ship of 500 tons would certainly be called a great ship. In 1572 the largest vessel sailing from the port of London was of 240 tons,² and the largest of the first fleet of the East India Company was one of 600 tons. I could give more definite information as to the capacity of these fleets at that time if I knew exactly what a *salma* was, for in a report on Portuguese trade sent to the Grand Duke Ferdinand I. of Tuscany (1587-1608) we are told that the fleet consisted of four or five carracks of the capacity of 5000 or 6000 *salme*.³ But a *salma* is a term for which one sometimes gets a very indefinite meaning, at other times definite but very diverse meanings, sometimes a weight of 25 lbs., which is obviously too little, and again a weight of 1000 lbs., which is probably too much. The large dictionary of Tommaseo gives this latter weight with an example stating the capacity of a ship; but if that were the meaning then the carracks would be of a burden of from 2250 to 2700 tons, a much heavier tonnage than is elsewhere indicated, so far as I am aware, for vessels of the period. Probably 3000 tons would be the outside limit of the aggregate cargoes annually brought to Portugal, for in any case much room in the ships was required for the large crews of those days with their armaments, for then the idea of carrying on commerce by sea without being in a position to defend your ship was out of the question.

Of the commodities sent home from India, Fitch mentions in this place only pepper, and the correspondence of Albuquerque with the King of Portugal soon after the discovery of the sea way to India clearly reveals how all-important the pepper trade was; but it may be worth while to give the complete list of the commodities which Ralph Fitch enumerates at the end of his *Narrative* as coming from India and the country further eastward. The list is not a long one. It comprises pepper, ginger, cloves, nutmegs and maces, camphora ("a precious thing among the Indians . . . solde dearer then golde"), lignum aloes, long pepper, muske, amber, rubies, sapphires, and spinels, diamants, pearles, spodium, and many other kinds of drugs from Cambaia—all of them, it will be observed, having the character of being of high value in proportion to their bulk, so that

¹ Horton Ryley, *Ralph Fitch*, p. 61.

² *Ibid.*, p. 17.

³ Angelo de Gubernatis, *Memoria intorno ai viaggiatori Italiani nelle Indie Orientali dal secolo XIII. a tutto il XVI.*, p. 149.

a very great value of such goods might be carried in ships of small capacity.

Fitch does not tell us what was sent in return, but information as to that is to be had from other sources and presents one or two points of interest. In 1513 Albuquerque, after a long course of fighting, concluded a peace with the Zamorin of Calicut, in which it was agreed, among other things, that the Zamorin should supply the Portuguese with all the "spices and drugs" his land produced, and that "coral, silk stuffs, quick-silver, vermilion, copper, lead, saffron, alum, and all other merchandise from Portugal" should be sold at Calicut as heretofore.¹ Coral comes first in this enumeration. To us at the present day this does not seem a very important article of commerce, but it was otherwise then. One Mafio di Priuli, writing from India in 1537 to the Magnifico M. Constantino di Priuli, says, "At a great fair which is called that of Tremel I have seen buttons of coral sold for their weight in silver."² That is the point of view of a European in India, but a native of the East Indies in Europe at the same date would no doubt have spoken with astonishment of the amount of silver that could be got in Europe for a few grains of pepper. Our letter-writer says in his cheerful, hopeful, gossiping way, "The gains of these parts are other than those of Damascus, Aleppo, and Alexandria: for if one does not gain cent. per cent. from Portugal here, and from here back again, one thinks that one gains nothing. And three or four years would be quite enough."³ But, while he indicates how these immense gains are made, he also indicates clearly enough how they continue to be made—that is, how they are so counterbalanced by losses that if these great gains were not made on occasion commerce would cease. It was all very well to exchange your coral for spices, but the great matter was to get your coral out and your spices home in safety. The writer of this letter had entrusted to a friend who had left on a ship for Ormuz jewels of the value of 4000 Venetian ducats, but the jewels were lost. He believed that his friend was murdered. "But such losses," he adds, "will occur." Another time he lost more than 6000 ducats in gold in Portuguese vessels going to Ormuz, and on another occasion he suffered great loss when Pegu was sacked by the King of Burma.

These notes may serve to illustrate the conditions of trade in the glorious days for Portugal when fine fortunes were heaped up in Lisbon through trade, but the great bulk of humanity got very little at least directly through that trade; but we have not exhausted the interest connected with the nature of the outgoing commodities for India, and to that it will be well to return. Another of the stipulations of the treaty of 1513 above referred to was that while duties were to be paid in coin "the Portuguese were to pay for all the pepper and other merchandise they might purchase in kind," and, as the peace led among other things to a dearth of prizes, Albuquerque "was constrained to send an urgent request home for large quantities of merchandise to be sent out to

¹ Danvers, *The Portuguese in India*, vol. i. p. 283.

² P. 34 of the letter referred to as published at Venice in 1824.

³ *Ibid.*, p. 29.

make up for this deficiency.”¹ How long this stipulation remained in force I cannot say, but things were certainly different a hundred years later. In the report to the Grand Duke of Florence above cited we are told that what the Portuguese carry to India for exchange is above all “silver in reals, and besides silver, wine, oil, and some other sort of merchandise, such as coral, glass, and the like, of little importance”; and as to the silver he adds that “the reals bring a gain of more than 50 per cent. as soon as they have reached India, for the real of eight, which in Lisbon is worth 320 reis, in India is sold and spent at the rate of 480 to 484 reis of that money, and with it one buys all sorts of spices and drugs which are sold there, except pepper, which is the monopoly of the King of Portugal and those to whom he gives a lease of that trade.” The importance of silver among the outgoing commodities for India has continued from that time down to the present day, latterly, however, in diminishing proportion. For a long time after the date at which we have now arrived it was as predominant as a means of exchange with India as it was in the first century of the Christian era, when the drain of silver from the Roman Empire to the East was bewailed by the writers of that time. In the voyages of the English East India Company of the four years 1620-23 inclusive the value of the bullion (chiefly silver) sent out to India was £205,710, as against only £58,806 worth of merchandise.²

Now, what is the meaning of the change in the position of silver in Indian trade which seems to have taken place between 1513 and the end of the sixteenth century? No doubt we may see there the result of another change in geographical relations brought about by a discovery nearly contemporaneous with that of the sea way to India—namely, that of the New World. The first result of that discovery of importance to commerce was the pouring into Europe of large quantities of the precious metals, and the quantity was enormously enhanced after the silver mines of Potosi, in Upper Peru (as it was then called), were discovered in 1545. It was probably this discovery that brought it about that of all commodities of such small bulk in proportion to their value as to stand the costs of transport to the East this was the one which could be sent out for most part with the greatest advantage. And this discovery no doubt also helps to explain why that of the sea way to India had so little effect for a very long time in lowering the prices of spices in Europe, why prices even rose. At the time of the return of Vasco da Gama from the first voyage to India the price of pepper at Lisbon is estimated by Danvers³ to have been about 1s. 5d. per lb., and we all know that the immediate occasion of the foundation of the English East India Company about a hundred years later was that the Dutch suddenly raised the price of pepper against the English from 3s. to 6s. and 8s. per lb.

¹ Danvers, vol. i. pp. 284, 286.

² I take these figures from p. 6. of the appendix to P. Colquhoun's *Treatise on the Wealth, Power, and Resources of the British Empire*, 2nd ed., London, 1815.

³ As above, vol. i. p. 64.

But the particular commodity which made up the principal portion of the outward trade to India is, after all, a matter of detail, though not unimportant detail. The main point on which I want to insist is that, whatever the commodities were, whether carried out or home, the nature of the trade with the East was little if at all altered by the discovery of the direct route to India by sea. The trade still continued to be one concerned in a moderate number of articles of small bulk but high value. It was merely a change of route that the Portuguese effected, and for more than a hundred years they remained in sole command of this route. After that, however, they were ousted from the greater part of this trade, and that the more valuable part, chiefly by the Dutch, and from a geographical point of view it is very interesting to note how the Dutch did it. They did not trouble themselves much about India proper. They left the Portuguese alone at Goa, and from that port as a base allowed them to pick up as much trade as they could at Calicut and Cochin, which, said Albuquerque, "were capable of supplying the Portuguese fleets until the Day of Judgment." But Malacca, on the straits of that name, gave command of the route to the further East, whence came in the end even larger quantities of pepper than could be got from India, whence came too ginger, cloves, and nutmegs, as well as the products of China. The importance of this place Albuquerque had accordingly recognised, and in 1511, the year after he took Goa, he took it also by the right that always belongs to the lion as against the jackal. This place was taken by the Dutch (1641), who had previously established themselves on Java and the Spice Islands, where they maintained an absolute monopoly. Ceylon, again, was (and is) almost the only place from which the true cinnamon was to be obtained, so the Dutch took that island also from the Portuguese (1656). As long as the Portuguese were the sole Europeans in the East, Calicut and Cochin not merely furnished the Portuguese with Indian wares, but were important entrepôts for the spices, perfumes, drugs, and jewels of the further East as well as of Chinese silks and porcelains; but the trade in these commodities could be wholly or largely diverted to places in the possession of the Dutch. Even before the capture of Malacca and Ceylon a Portuguese viceroy had reported (1638) that the Dutch had a monopoly of trade from the Bay of Cochin China to the point of Sunda.

But this change also was little more than a change of route. The general character of the Eastern trade remained the same. The English East India Company, whose operations, through the hostility of the Dutch, came to be restricted to India proper, there founded a trade that gave much more opportunity for expansion under modern conditions than that of the Dutch, but for a long time it retained the same character. All the commodities enumerated by Colquhoun as brought back by the voyages of 1620-3 in exchange for the bullion and merchandise sent out were pepper, cloves, mace, nutmegs, Chinese and Persian raw silk, besides calicoes, the sole manufactured article, and one of course that had relatively a much higher value than now, when the direction of the trade in that commodity is reversed.

A similar character for a long time belonged to the trans-Atlantic

trade, even though the costs of transport in that case were less, and favoured the development of a trade in somewhat bulkier commodities. Furs from the Far North, tobacco from Virginia, sugar and afterwards coffee and cotton from the West Indies, were by far the most prominent imports. It was the tobacco trade of Virginia that first enabled Glasgow, which at the time of the Union of the English and Scottish Parliaments was an insignificant town with less than 13,000 inhabitants, to convert itself into a seaport, and thus lay the foundations of its subsequent prosperity. Now tobacco makes up less than 1 per cent. of the value of the goods imported at Glasgow, and, though that may be partly due to a diminution in the actual quantity of tobacco imported at Glasgow, this result has chiefly been brought about by changes in relative values. A hundred years ago the value of the imports into Great Britain and Ireland from the British West Indies was about one-fourth of the total value of the imports from all parts; now it is less than 1 per cent. of that value.

What has brought about such changes, what makes the essential difference between recent and all previous commerce, is the series of enormous improvements in the means of communication which followed so closely on the invention of textile machinery and the improvement of the steam-engine in this country. These improvements have had two important effects on commerce. First, they have facilitated the maintenance of order and security both by land and sea, and thus enormously reduced the risks of commerce. Secondly, they have directly lowered the cost of transport for different goods in different degrees. Bulky goods of little value could now for the first time be profitably conveyed many hundreds of miles by land to a seaport, and there load ever larger ships for distant shores, thus opening up markets with vast undeveloped resources in the heart of great continents. Along with these bulkier goods the more valuable goods are carried at a cost far below that of former times, so that for such commodities as pepper the mere freight is almost a negligible item.

At the present day there can be no doubt that in point of quantity the spice trade is much larger than it ever was. If Venice could get the whole of that trade into her hands, a thing which she never had, notwithstanding the patriotic boast of Doge Mocenigo, the trade would not now bring her a tithe of the wealth which it brought in the days of her grandeur. Much has been said of the sudden "fall" of the Portuguese and Dutch in turn, and that fall has often been explained by mistakes in method. "The fall of the Dutch colonial empire resulted," says Sir William Hunter, "from its short-sighted commercial policy. It was deliberately based upon a monopoly of the trade in spices, and remained from first to last destitute of sound economical principles."¹ But one may well ask, Did the Dutch ever fail in a manner for which they were in any way responsible? It is true that the Dutch East India Company did not supply as many people as they could with the spices of which they held the monopoly. But that was not their aim. It is true that

¹ *Imperial Gazetteer of India*, 2nd ed., vol. vi. p. 362.

they did not build up a great empire like that of the English East India Company. But neither was that their aim. Their aim was to declare dividends, and dividends they declared. The profits of the company down to 1720 averaged 20 per cent. per annum, never sinking below 15 per cent., and sometimes rising to 50 per cent. If spices ceased to enable them to declare such dividends that was not their fault. It was James Watt, George Stephenson, William Symington, and Robert Fulton, who, without intending it, and without being able to foresee what in this respect they were destined to do, sucked the value out of pepper, and that in a manner which neither the strength of armies nor the subtlety of statesmen could have done anything to prevent.

Now the countries that offer the most attractive markets for the greatest quantities of goods of all kinds are no longer those which look to the spice trade or to trade in any specially valuable commodities for their enrichment, but those which abound in coal so placed as to develop a great amount of manufacturing industry, an industry engaged for the most part in working for the million, not merely in producing the luxuries of the rich. The commodities of very small bulk in proportion to their value now have a comparatively insignificant place in commerce. The precious metals and precious stones still indeed retain a good deal of their former importance. But very few vegetable or animal products can be put in the same category. Rubber, indeed, may be reckoned as one, and very handsome profits are reaped from some rubber estates. But every one knows that such exceptional profits can be reaped only for a short time. Of animal products ornamental feathers are the most valuable in proportion to their bulk. Egrets' feathers, I believe, are seldom worth less and often worth a good deal more than twice their weight in gold, but ornamental feathers altogether make up less than a third of 1 per cent. of the total value of British imports.

Perhaps the greatest feature of modern commerce is the unparalleled manner in which it has promoted the increase of population nearly all the world over. Rendering it possible for manufacturing and commercial peoples to depend in a very large measure for their very means of subsistence on supplies brought from the ends of the earth, it is rapidly pushing the settlement of vacant land to the base of the mountains and the edge of the desert. Fifteen years ago Professor Bryce said, "We may conjecture that within the lifetime of persons now living the outflow from Europe to North America will have practically stopped."¹ We are at least nearing the time when the "new lands" of this earth in the temperate zone will all have been allotted. The results of such a check to expansion after a long period of stimulation to expansion must be momentous, but what the nature of these results will be I for one confess that I am unable to foresee. I am, however, convinced that, if we are to be enabled to make any probable forecast as to the course of future development, one of the most important aids to that result must consist in the study of the relations of geography and history

¹ "The Migrations of the Races of Men considered Historically," in the *Scottish Geographical Magazine*, 1892, p. 419.

from the point of view which I have endeavoured to indicate. To study these relations merely with reference to the immediate causes and effects of wars and treaties gives little real insight into the working of geographical influences in history. As in the study of the human body medical men have recognised the necessity of ascertaining with the aid of the microscope the normal functions of the cells of which the body is composed, the pathological states that interfere with their normal working, and the effects on one part of the body of minute disturbances of function in another part, so in tracing the course of history it is becoming more and more recognised that the minute gradual silent changes must be inquired into and taken into account, not merely in relation to the regions in which they take place, but in relation, it may be, to regions far distant. Such studies, it is true, are not confined to the geographer. In them, indeed, the geographer must seek the aid of workers in other fields; but there can hardly be a doubt that it must help greatly towards arriving at a sound solution of the problems presented to keep steadily before one the geographical point of view. The field for such studies is of course immense, the material perhaps not all that could be wished; but I can imagine no task more delightful for those who have the opportunity to engage in it than that of seeking out and examining from that point of view such material as actually exists.

THE PLACE OF ORIGIN OF THE MOON—THE VOLCANIC PROBLEM.¹

By Professor WILLIAM H. PICKERING, Harvard University.

(*With Illustrations.*)

IN 1879 Professor George H. Darwin propounded the view that the Moon formerly formed a part of the Earth. That it was originally much nearer to the Earth than it is at present, and is now slowly receding from us, was clearly shown by his equations. After considerable discussion, his conclusions have been accepted by the great majority of astronomers, although many of the geologists do not view them with favour. Assuming the correctness of his hypothesis, it will be of interest to determine, first, if possible, from what part of the Earth the Moon originated, and, second, to follow out our conclusions on this point and see to what results they may lead.

When the separation took place, it has been shown that the combined planet was not very much larger than is the Earth at present. It must therefore have been mostly in the solid or liquid condition. If in the latter state, it is obvious that no indication of the Moon's former place could be found at the present time. Very few astronomers or geologists to-day, however, believe that the Earth ever was completely

¹ Reprinted, with the author's corrections and additions, from *The Journal of Geology*, xv. 1 (1907).