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*Towards an 'Intercontinental Model' : Some Trends in Indo-European Trade in the Seventeenth Century**

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I

There have been few attempts to analyse world trade flows prior to the Industrial Revolution in terms of a theoretical and structural model. A notable exception is an article published by Professor F. Mauro some years ago.¹ Prof. Mauro's suggestions indicate several interesting and important lines of investigation. The most important of these was, first of all, an identification of the primary geographical areas whose complementary products formed the main basis of world trade exchanges during this period. The second problem is the more difficult task of determining to what extent a theory is stated in terms of the intercontinental division of labour applicable to intercontinental trade between 1500 and 1800. In order to devise an analytical tool for answering questions such as these, Mauro suggested the use of a squared table or a matrix whose rows and columns contained respectively the exports and

*This article is a slightly revised version of a paper read at the Conference on Modern South Asian Studies, held at St. John's College, Cambridge, July, 1968. The commentator on the paper was Dr. Amiya K. Bagchi, Fellow of Jesus College and University Lecturer in Economics. A brief summary of his comments is published at the end. The responsibility for any error or mis-specification of the structure equations must of course rest with me. The paper must be treated only as an interim report on a long-term project on British trade with India between 1600 and 1760, which will contain a systematic presentation of the quantitative material available in the India Office Library, London. I am greatly indebted to a number of people for helpful comments, among them particularly to Dr. Daniel Thorner, for bringing to my attention Mauro's article, and to Dr. B.K. Das Gupta for his help in programming the statistical data for computer analysis.

1. F. Mauro, "Towards an 'intercontinental Model' : European Overseas Expansion between 1500 and 1800." *Economic History Review*, 2nd series, XIV(1961-62), pp. 1-17.

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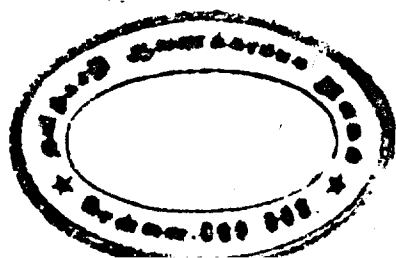
imports of the principal trading zones. Thus the total volume of world trade indicated by the symbol V is the sum of the total exports of the following zones, Europe (E), Africa (A), Temperate America (T), Tropical America (R), and Asia (S). Similarly, V is also the sum of the following imports of these areas, e, a, t, r, s . The use of matrices in analysing inter-dependent systems has long been recognized, and in this particular case it provides a very convenient way of deriving the ratios and constants in the system. For example, the import-export ratios of each zone can be written at once in the following form :

$$\frac{e}{V} + \frac{a}{V} + \frac{t}{V} + \frac{r}{V} + \frac{s}{V} = \frac{E}{V} + \frac{A}{V} + \frac{T}{V} + \frac{R}{V} + \frac{S}{V} = \frac{V}{V} = 1.$$

This basic equation can be extended in many other ways for the construction of a static or dynamic structural model. The article ends with a plea for the continuation of empirical studies that would fill in the empty elements of Mauro's matrices. The aim of the article, to quote his own words, 'was not to build up a model which could be concrete, dynamic and qualitative. That will be a long-term task, based on the combination of huge collections of statistics. Our aim has been more modest; to incite scientific research into undertaking this combination, by showing its interest.' Such labour, Mauro continues, 'would lead on to others; first the simple one of constructing a model for each empire, and then the relatively easy one of sketching in the national economies themselves—for these are thoroughly bound up with the colonial economies'².

The author rightly emphasised the importance of colonial or East India trade in Europe's international economy during the period 1500 to 1800. For such trade was the direct consequence of the discovery and working of the Spanish American silver mines and the consequent rise in world money supply. My purpose in this paper is to examine some of the theoretical and empirical issues raised in Mauro's article in the light of actual historical evidence available. Part II presents some of the basic data concerning the seventeenth century material, while part III deals with the problem

2. F. Mauro, *op. cit.*, p. 17.



of constructing a suitable theoretical framework. The approach followed here emphasises quantitative analysis with the application wherever possible of certain established statistical techniques. Economic theory is subsequently used to provide deductive explanation. The essay is a tentative one in more than one way. In the first place, no attempt was made to explore the full range of statistical tools. Secondly, it is concerned with only the English East India Company's trade with Asia. However, since the main objective of the exercise is to study the dynamic behavior of trade with as much precision as possible, the latter limitation may not appear very great.

II

For most economic historians the possible use of rigorous statistical methods in economic measurement is a relatively recent discovery³. So far the initiative has mainly come from scholars working in the United States on American economic history in the nineteenth century. But clearly econometric methods can be extended to other areas and periods of history. One such obvious field is the history of international trade. For nearly two hundred years economists have been inquiring into the reasons why nations trade. Yet, the history of world trade in the pre-Industrial Revolution period, as we have seen, with the exception of Mauro's article, is still without an adequate treatment in terms of the various economic models available. One of the chief limitations in employing powerful mathematical techniques in the economic history of remote periods is of course the unreliable and often the absolute lack of adequate data. In this respect the students of early European trade with Asia are unusually fortunate. The records of the various East India companies in the seventeenth and eighteenth centuries provide an unique opportunity to gain a first-hand insight into the actual trading conditions of that time. More specifically, these

3. On the use of econometric methods in economic history see, R. W. Fogel, "The New Economic History: Its Findings and Methods," *Economic History Review*, 2nd series, XIX (1966); "The Specification Problem in Economic History", *Journal of Economic History*, XXVII (1967); Meghnad Desai, "Some Issues in Econometric History", *Economic History Review*, 2nd series XXI, (1968).

documents can be utilised to illuminate two distinct themes: the behavior of the firm and the general pattern of the East India trade.

For the English East India Company's Asian trade, the most important sources are undoubtedly its account books from which it is possible to construct almost complete time-series on its exports and imports and trends in prices. Since the data presented here are all compiled from these account books, it may be useful to say a few explanatory words on their nature. The series begins in 1664 and continues until the termination of the Company's trading activities in 1833. Needless to say the range and type of information contained in them change over time with changes in accounting methods and practices. For each year there are generally three separate sets of books: the Cash Journal, the Commerce Journals and the Ledger Books. For the purpose of calculating the total value and volume of the Company's trade either the Commerce Journals or the Ledger Books can be used, since the cargo of every incoming and outgoing ship is given in both at least until about 1700. The difficulty is the very large number of total transactions recorded in these documents. The Ledger Books, for example, contain not only the value, quantities, and the freight costs of all commodities received from Asia but also the corresponding figures for the goods sold in London together with the names of the purchasers, which may run into several hundred entries. The problem was solved by tabulating and aggregating all the figures directly from the original records on a desk calculating machine. This data was then transferred to punched tape and a trial analysis has been carried out at the University of London Institute of Computer Science. The seventeenth century material in this paper refers only to the first 18 years of the Company's trade since 1664. It is hoped that eventually complete coverage would be extended to about 1750.

The broad characteristics of early European trade with Asia and its transformation into a recognisably modern form in the nineteenth century are well-known and have been stated many times. One of the generally accepted contentions, which has emerged out of the famous Wilson-Heckscher controversy on multilateralism in European trade in the seventeenth century, is that whatever may have been the case in Europe, the East India trade at least was

essentially bilateral⁴. It was also dominated by a chronic deficit in the balance of trade against Europe. Import of treasure into Asia consequently was a chronic feature of this trade. Whether such imports took the character of commodity transactions or were the result of monetary factors is a question that will be considered later. But in this context we might note that it is also sometimes asserted that the East India Company raised additional finance for its exports from the Indies by trading between Asian ports and by extensive borrowings from Indian bankers which provided temporary liquidity. This was no doubt true. But in order to measure the exact degree of relationship, we fitted the standard correlation equations (Pearson product-moment coefficient) to a total of 20 variables, and carried out a regression analysis between the Company's Asian exports and imports from Europe. The complete 20×20 correlation matrix is presented in Appendix I.

There was an obvious problem of time-lag, which was solved by lagging the imports by two years. The exports of 1664-65, for example, were regressed on the imports of 1662-63. The results were quite good and a highly significant correlation was found to exist between exports, imports of merchandise and treasure, and total imports. The regression equation for exports (dependent variable) and the total imports is:

$$Y = 18144 + 0.803 X$$

$$R = 0.963 \quad R^2 = 0.928.$$

While the most significant correlation was to be found between the above two variables, the coefficient for merchandise and treasure was also quite good, being 0.770 and 0.796 respectively. There is an expected inverse correlation between the exports and the ratio of their sale value to costs (−0.597, see Table 1, column 8 and the table of correlation matrix in Appendix I) and also between the former and the ratio of their sale value to total imports. In other words, a high value for either of these two ratios is an indication of

4. For references to the controversy see, Jacob M. Price, "Multilateralism and/or Bilateralism: the Settlement of British Trade Balances with 'The North', c. 1700," *Economic History Review*, 2nd series, XIV (1961); it is also discussed in my article, "Treasure and Trade Balances: the East India Company's Export Trade, 1660-1720," *Economic History Review*, 2nd series, XVI (1962), pp. 491-503.

prevailing high selling prices in Europe and therefore a higher margin of profits for the Company, but the years when this took place were also the ones which saw a downturn in the value of the total exports. In functional terms, these results have to be evaluated in the light of the state of elasticities of demand for East India commodities, particularly pepper and calico which together accounted for the highest proportion of the export values. Statistical analysis, it may be pointed out, does confirm the general impression that the Company's trade with Asia was bilateral. Since over 90 per cent of the fluctuations in exports are attributable to the level of imports, neither the Company's 'country' trade in Asia nor its borrowings in India can be considered as being of much importance, except perhaps indirectly.

The overall relationship between the Company's total exports and imports can be seen in Table 1. With the exception of the two war years, the Anglo-Dutch wars of the 1660's, the balance of trade was always in favour of the Indies, although there was a great deal of fluctuation in the size of this balance. The actual changes in the money balance are indicated in column 3 of the Table and the real balance or the ratio of exports to imports in column 6. The general trend is confirmed by correlation between time and the trade variables. The most significant ones are between total imports, trade balance, exports, and imports of treasure. The coefficient for import of merchandise is weaker than any others, but as we can see from the actual figures in Table 1, the position is very different when treasure is included in the total imports. Only in 5 years out of 18 was the percentage of exports in relation to imports higher than 100 (see column 7), the average ratio in other years being between 70 and 80. If the import of gold and silver is considered a part of the commodity flows, because the West had a comparative advantage in their production⁵, then it is no longer true to say that the balance of trade was always against Europe, and it is arguable that the rise of the East India trade on a large enough scale would have been impossible without the discovery and working of the American silver mines. To some extent of course it is a matter of

5. Cf. Rudolph C. Blitz, Mercantilist Policies and the Pattern of World Trade, 1500-1750, *Journal of Economic History*, XVII (1967).

semantics, since international trade is generally considered a function of prices, both relative and absolute. The theoretical factors behind this statement will be discussed in Part III, but it may be pointed out here that for the balance of payment position, the implication of the situation described above is that only a certain proportion of the total imports financed the actual exports. The balance was accounted for by overhead costs in India and the need to build up a margin of working capital.

Since the account books provide complete information on the cost as well as sale value of the Company's exports from the Indies, it is possible to test the degree of correlation between the various items in terms of cross elasticities with the margin of profits being treated as the independent variable. But as it involves a certain amount of detailed mathematical programming, this was postponed for a more leisurely treatment. A simple visual impression, however, can be gained from Table 2 which sets out the share of the export commodities in total cost value and sale revenue. The most dramatic development in contrast to the preceding period was the emergence of Indian textiles as the most dominant group of Asian commodities sold in the European markets. In 1664-65, for example, the textiles formed 72 per cent of the total value of the Company's exports from Asia. Pepper which was exported from the Malabar coast in India as well as Indonesia came to 13 per cent, while saltpetre was a mere 4 per cent. Indigo, the only other single item to be exported in bulk, did not appear in the invoices for this year, but its share generally fluctuated between 3 and 5 per cent of the total cost value. In terms of absolute quantities, as Fig. I shows, the trend was steeply upward both for calico and pepper, and the correlation between time and textiles was 0.806 and for pepper 0.676, both being significant. For prices no clear trend is visible for either of these two commodities (see Fig. II), except for a cyclical fluctuation which may be attributed to weather conditions affecting the size of the cotton crop and the harvest of pepper. The index of prices for the textiles, however, is a weighted one in our example and raises the difficult problem of distinguishing between changes in the quality of the goods ordered and genuine price movements. For the purpose of measuring the price trends in Asia, it may be better to take an unweighted mean.

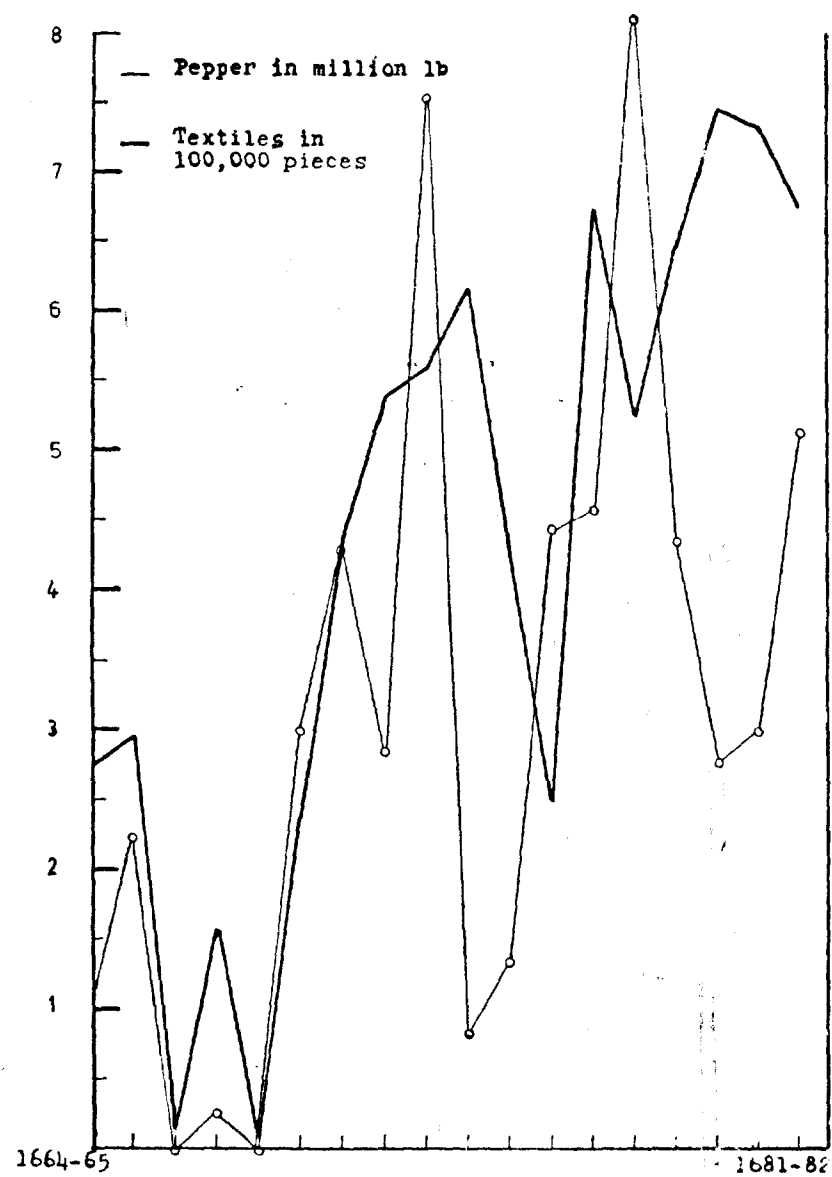


Fig. I

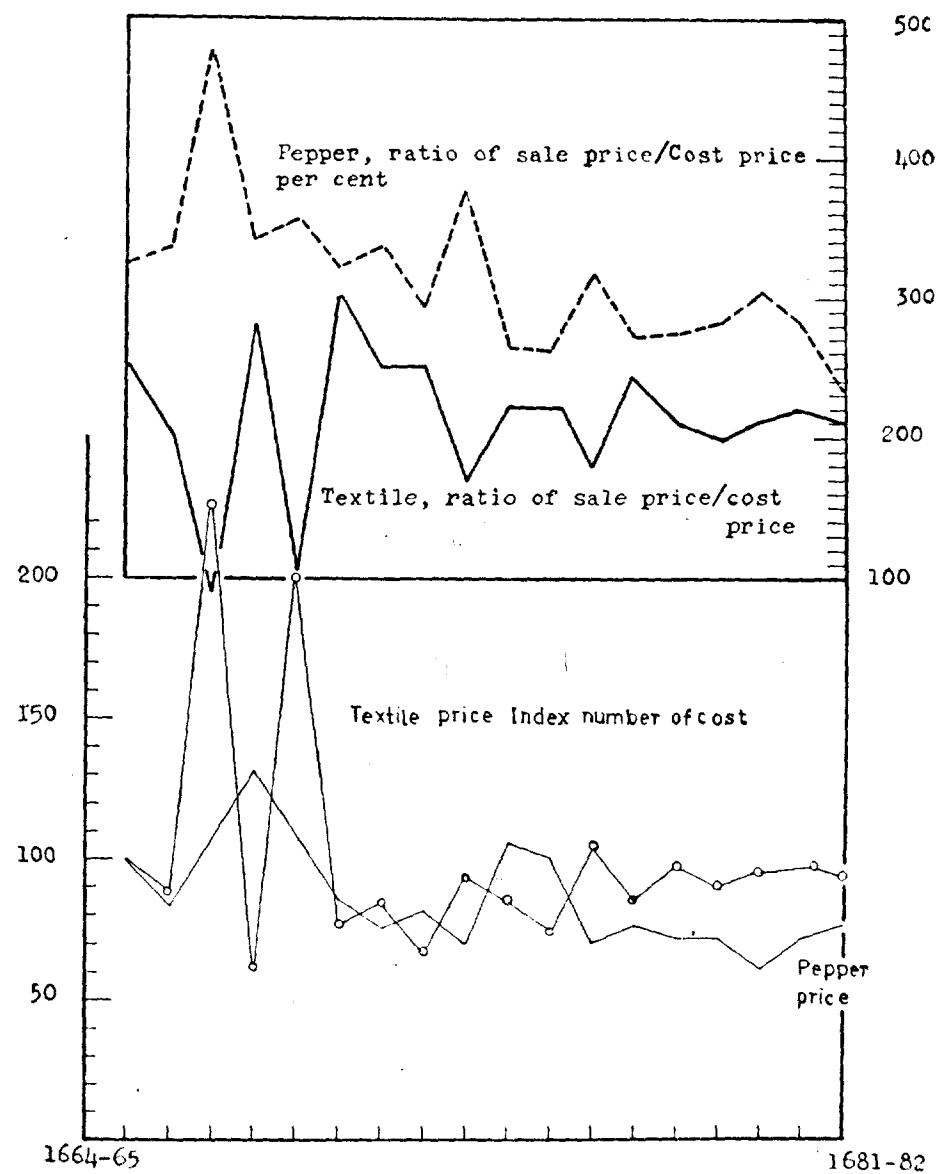


Fig. II

While the textiles occupied an extremely important position in the East India Company's total Indian exports, their share in the sales was less than in the total costs. The conclusion to be drawn from this and a comparison of the ratio of cost to sale price for pepper and calico is that (see Fig. II), while the textiles provided the largest absolute proportion of revenues, the rate of profitability on this class of goods was nevertheless lower than that on pepper. The evidence seems to suggest, as one would perhaps expect, that the main factor in the Company's decisions was the maximization of total sales. Obviously, the demand conditions in Europe for the East India commodities and the supply situation in Asia played an important part in determining the pattern of trade carried on by a monopoly company, though in view of the existence of the rival Dutch and French East India Companies it would be more correct to describe the English Company as oligopolistic. The Court of Directors in London were not of course insensitive to the rates of profits and their orders to the factors in India show careful attention to such details⁶.

While on the demand side the position was complicated by the semi-monopoly position of the Company, in case of the supplies the Company was only one of many buyers and hence was not in a position to influence prices in India. The most clear indication of this situation can be seen from a letter written by the Surat Council in Western India in 1679, when the factors pleaded their inability to reduce prices of goods in India on the following ground: "As to the prices of goods sent from hence, if they prove dearer than heretofore, it lies not in our power to prevent, the Markets of these countries governing not by our Investments, but such contingencies as are accustomed in other places".⁷

But there were other unexpected complications also. As the Court of Directors were able to exercise little effective control over their servants in India, one of the endemic complaints was the alleged dishonesty of their factors. The latter sometimes did in

6. In 1707, for example, the Court of Directors increased their investments in Bengal goods and reduced those in Madras on the ground 'as we are merchants we must deal less in those goods which turn out to little advantage.' Letter Book, XIII, f. 86, 17 Feb. 1707. (India Office Library).

7. Original Correspondence, vol. 39, No. 4563, I.O.L.

fact enter into fraudulent agreements with the Indian middlemen to raise the invoice price of export goods. Abnormal factors such as these can be treated analytically as rigidities and imperfections in the operation of the market mechanism, and their effects embodied in the functional relationship obtaining between quantities and their prices. The structure and operation of the market linking the producers in India to the final consumers in Europe is seen most clearly with the use of some algebraic symbols. The whole chain can be written in the form of the following two matrices :

$$A = a_{11} \quad a_{12} \quad a_{13} \quad \text{where} \quad a_{11} = \text{the Court of Directors}$$

$$a_{12} = \text{the wholesale dealers in England}$$

$$a_{13} = \text{the final consumers in England}$$

$$B = b_{11} \quad b_{12} \quad b_{13} \quad \text{where} \quad b_{11} = \text{the Company's buyers in India}$$

$$b_{12} = \text{the Indian merchants supplying the goods}$$

$$b_{13} = \text{the producers in India}$$

This notation enables us to write $qA = f(pB)$, where the demand qA represents an aggregation of the total matrix A and the final price pB that of the matrix B . It will be seen that a similar functional relationship can be expressed for any pair of elements of the two matrices, but since we are concerned with international trade movements the chain is cut here between the two trading regions. The function can be expressed also in another way :

$$q(a_{11}) = f[p(a_{12}), p(b_{11})],$$

the quantities demanded and supplied by the Company being a function of the demand curve in Europe and cost curve in India. The differentiation of the above function yields two partial derivatives and measures the degree of elasticities.

Since the relevant data is available for $q(a_{11})$, $p(a_{12})$, and $p(b_{11})$, an

attempt was made by the standard econometric method to calculate the constant elasticity for these variables for a number of selected commodities. First, we define the price elasticity of demand in the usual way: the elasticity of Y in regard to X being $dY/dX \cdot X/Y$. We write $Y_1 = q_1(a_{11})$, $Y_2 = q_2(a_{12})$ where $q_1(a_{11})$ is the quantity ordered by the Company in India and $q_2(a_{12})$ those sold in London; similarly, $X_1 = p(b_{11})$, $X_2 = p(a_{12})$. The demand curve for Y in terms of constant elasticity is written in the form of equation of a rectangular hyperbola: $Y = AX^{-b}$. By taking logarithms this function can be expressed in linear form as $\log Y = a - b \log X$, where $a = \log A$.⁸ The solution of the last equation yields the estimated value of b or the constant elasticity, which is easily achieved by fitting our data into the standard least-squares formula. The elasticity of demand for pepper for the two equations was:

$$\log Y_1 = 14.087 - 4 \log X_1, \quad (IA)$$

$$\log Y_2 = 12.247 - 3 \log X_2. \quad (IB)$$

In order to test the goodness of fit for the regression we also calculated the correlation coefficient. For (IA) $R = -0.890$ and (IB) $R = -0.796$. Since the closeness of the fit depends on the correlation coefficient being close to ± 1.000 , these particular estimated coefficients can be considered quite good. In the first case the correlation is much more significant than in the second, as $R^2 = 0.792$ for (IA) and $R^2 = 0.635$ for (IB), or 80 per cent of the fluctuations in the first example being due to price factors with only 60 per cent in the second. In view of these results—the high value of the regression slope—the statement that pepper was a textbook example for which the demand was inelastic can no longer be considered valid.⁹

Of course the interpretation of these estimates is subject to the usual difficulties created by possible shifts in demand and supply

8. For an extensive discussion of the statistical techniques and problems of interpretation of results see, Henry Schultz, *The Theory and Measurement of Demand* (Chicago, 1938); J. Johnstone, *Econometric Methods* (New York and Tokyo, 1963), p. 48; J. R. N. Stone, *The Measurement of Consumers' Expenditure and Behavior in the United Kingdom, 1920-1938* (Cambridge, 1954) pp. 231-256; C. F. Christ, *Econometric Models and Methods* (New York, 1966), pp. 305-334.

9. Blitz, *op. cit.*

curves, either singly or together. As the demand for a particular commodity is a function of more than just one variable, price, this is a real danger in case of estimates based on only one independent variable. In the case of pepper, however, it seems reasonable to assume that the demand curve in the short-run would not shift very much as a result of changes in consumer taste. There are no substitutes, and income changes are not likely to be significant for the limited number of years for which the computations were made. Consequently, there is the possibility of only the supply curve shifting due to weather or other factors.

A price elasticity of 4 or 3 for pepper may appear unduly large, though the negative sign of the regression coefficient is as expected and measures the fluctuations from the consumption side. There is qualitative evidence to indicate that the Company was extremely sensitive to the level of cost price for pepper in Asia. In 1678, for example, the Court gave strict instructions to the factors in Surat that no pepper was to be sent unless the prices were below 2.5d per lb. As the price of pepper was particularly high in Malabar in this year, the Surat Council reluctantly decided to stop shipment, though not without protesting that the Court of Directors should have allowed them some latitude in this matter.¹⁰ The highly elastic demand of the Company reflected the corresponding elasticity on the part of consumers in Europe, a fact which is somehow surprising for a commodity such as pepper. Its explanation probably lies in the fact that it had not as yet become an article of mass consumption and the reduction in price in relation to the existing level of income led to a rapid increase in demand, the slope of the demand curve probably flattening out beyond a certain point. Faced with a demand curve such as this, it can be argued that the Company would continue to increase its imports until marginal costs equalled marginal revenue. This hypothesis is supported by a comparison between the Company's pepper imports in the earlier half of the seventeenth century when the annual imports seldom exceeded 2 million lb and those in our period¹¹. In contrast to

10. *The English Factories in India* (Oxford, 1954), vol. III (new series), pp. 228-29.

11. For the imports of pepper between 1600 and 1640 see, my *The East English India Company; the study of an early jointstock company 1600-1640* (London, 1965), p. 148; the figures for the period under review are given in Fig. 1.

pepper the regression for textiles was found to be a little disappointing. The elasticity was just as high but the correlation was much less significant. The equation is given below :

$$\log Y_1 = 115.586 - 3 \log X_1$$

$$R = -0.550$$

One of the obvious explanations of this result is that the calculations are based on figures which raise important index number problems and hence lack sufficient precision¹². There is also the fact that consumer taste was an important element in the marketing of Indian cotton goods. As a result shifts in the demand curve are likely to have taken place. On *a priori* grounds, a high elasticity of demand for Asian textiles can be expected, since it was a new commodity with many competitors and sources of supplies. A high elasticity of demand for East India commodities in Europe had certain implications for the policy of a Company operating under semi-monopoly conditions in the sellers' market. It is difficult to make a corresponding calculation for the Company's imports into India, as the records do not always provide selling prices in the local markets. But the factors' chronic complaint that European goods were not saleable in India seems to suggest that the total size of the market was fairly small and confined to the richer section of society. In view of the very large difference in the absolute level of prices between Asia and Europe during the time, even a very high elasticity of demand in Asia would probably not be very effective in correcting the balance of trade situation. Obviously, any explanatory model must take into account both the level of prices as well as income, which we shall examine in the next section.

III

Historians, when confronted with actual events, economic or otherwise, take their causal factors as being given and are much

12. The problem is essentially an adding-up one ; there are some 60 to 70 different types of cloth and within each type there were 5 to 6 marking-ups according to quality.

more interested in facts themselves or their possible effects. Thus the pattern of Indo-European trade, the heavy imbalance between exports and imports for example, is sometimes vaguely explained on the ground that there was a demand for Indian goods in Europe while the absence of such demand in India and elsewhere in Asia is attributed to the rigidities of consumer taste or the unsuitable climate which hindered the sale of heavy broadcloth, the staple English exports. These factors are no doubt necessary, though hardly sufficient, for a complete explanation. It is seldom asked why consumers in Europe should have developed a penchant for cotton cloth in a cold climate. Economic theory, of course, provides a simple and often elegant answer to such questions. Trade across national frontiers conducted by businessmen, as Ricardo's famous theorem shows, is a function of international differences in production costs and prices. A glance at our original two matrices demonstrates that trade between *A* and *B* would hardly have taken place unless there were prospects of profits. Even so, in our case, trade was only a little more than just one-way.

Theoretically, the peculiar pattern of India's trade with the West raises two problems¹³. The first is whether the Ricardian theorem of comparative costs, expressed in terms of differences in production costs and therefore 'real' prices measured by factor inputs, is applicable to the Indian situation during this period. The second problem is that of devising a model with both demand and monetary factors which can then be used as an approximate explanation for the behavior of India's trade balance. The theory of comparative costs, since its discovery in the early nineteenth century, has been developed in a number of ways. Very briefly, it rests on the assumption that different countries have different ratios of output-factor inputs, due either to the difference in production functions or the productivity of the factors themselves, which causes trade to take place between these countries¹⁴. Once trade had taken

13. For the rest of the paper 'India' is used for Asia since the English East India Company's trade was concentrated mostly in the Indian sub-continent.

14. The Ricardian theorem is of course concerned with both why trade takes place and demonstrating that it is beneficial in terms of economic gain. For a review of the various theories see, Jagdish Bhagwati, "The Pure Theory of International Trade: A Survey", *Economic Journal*, LXXIV (1964) ; John S. Chipman, A Survey of the Theory of International Trade, *Econometrica*, vol. 33 (1965), 34 (1966).

place, the difference in 'real' costs is no longer an absolute one but it is a matter of different opportunity costs. The actual volume of trade is determined by demand conditions, or the shape of the Marshallian offer curve, which fixes the terms of trade. A further refinement of the theory is found in models developed by Heckscher and Ohlin which explain differential output-factor ratios in terms of the different factor endowment of each country. In the classical theory of international trade, the monetary factors are linked to the 'pure' theory through the adjustment mechanism in the balance of payment. If there is a persistent and large difference in the absolute level of prices between two trading countries, its effect is felt through fluctuations in the foreign exchange market. The Ricardian specie-flow/price mechanism then restores equilibrium. It will be seen that the adjustment process essentially rests on the validity of the equation: $MV = PT$.

For Indo-European trade in the seventeenth and eighteenth centuries, there is no doubt that the positive aspect is partly explained by price differences, which did in fact cause the Ricardian specie-flow mechanism to work. As precious metals are universally used to measure domestic as well as international prices, no other definition of their role in international finance is possible. Before we examine whatever quantitative and qualitative evidence that is available, it may be relevant to set out a model which takes account of the precise conditions which lead to a persistently favourable trade balance for India. There are a number of models one can draw upon; we propose to use one which has been developed in connexion with the problem of 'dollar-shortage' in the post-War years¹⁵. The model is based upon two countries and two commodities. We write RT_1 = the rate of change in country 1's trade balance. N_1 and N_2 = the price elasticity of demand. E_1 and E_2 = the income elasticity of demand. rP_1 and rP_2 = the rate of change in prices. R_1 and R_2 = the rate of change in income. The equation for the change in country 1's trade balance over time

15. See H. G. Johnson, "Increasing Productivity, Income-Price Trends and the Trade Balance", in *International Trade and Economic Growth* (London, 1958); R. A. Mundell, "The Pure Theory of International Trade", *American Economic Review*, vol. 50 (1950).

can be written in the form :

$$RT_1 = (N_1 + N_2 - 1)(rP_2 - rP_1) + E_1R_1 - E_2R_2.^{16}$$

16. The proof of the equation is as follows. The single good which is both consumed and exported is denoted by Y . The rate of change in Y is

$$R = \frac{1}{Y} \frac{dY}{dt}; \quad rP = \frac{1}{P} \frac{dP}{dt}; \quad \pi = \frac{P_1}{P_2}.$$

The export of Country 1 and 2,

$$X_1 = f(\pi, Y_2), \quad X_2 = f\left(\frac{1}{\pi}, Y_1\right).$$

The price elasticity,

$$N_1 = \frac{\pi}{X_1} \frac{\partial X_1}{\partial \pi}, \quad N_2 = -\frac{\pi}{X_2} \frac{\partial X_2}{\partial \pi}.$$

The income elasticity,

$$E_1 = \frac{Y_1}{X_1} \frac{\partial X_1}{\partial Y_1}, \quad E_2 = \frac{Y_2}{X_2} \frac{\partial X_2}{\partial Y_2}.$$

Country 1's export ratio or real trade balance is defined :

$$T_1 = \frac{P_1 X_1}{P_2 X_2} = \frac{\pi X_1}{X_2}.$$

$$\frac{dT}{dt} = \frac{d}{dt} \left(\frac{\pi X_1}{X_2} \right) = \frac{X_2 X_1 \frac{d\pi}{dt} + X_2 \pi \frac{dX_1}{dt} - \pi X_1 \frac{dX_2}{dt}}{X_2^2} \quad (1)$$

$$= \frac{1}{X_2^2} \left[X_2 \left(X_1 \frac{d\pi}{dt} + \pi \frac{dX_1}{dt} \right) - \pi X_1 \frac{dX_2}{dt} \right]$$

$$\pi \frac{dX_1}{dt} = \pi \frac{\partial X_1}{\partial \pi} \frac{d\pi}{dt} + \pi \frac{\partial X_1}{\partial Y_2} \frac{dY_2}{dt}. \quad (2)$$

$$\pi X_1 \frac{dX_2}{dt} = \pi X_1 \left(\frac{\partial X_2}{\partial \pi} \frac{d\pi}{dt} + \frac{\partial X_2}{\partial Y_1} \frac{dY_1}{dt} \right) \quad (3)$$

Substituting (2) and (3) into (1)

$$\begin{aligned} \frac{dT}{dt} &= \frac{1}{X_2^2} \left[X_2 \left(X_1 \frac{d\pi}{dt} + \pi \frac{\partial X_1}{\partial \pi} \frac{d\pi}{dt} + \pi \frac{\partial X_1}{\partial Y_2} \frac{dY_2}{dt} \right) - \pi X_1 \left(\frac{\partial X_2}{\partial \pi} \frac{d\pi}{dt} + \frac{\partial X_2}{\partial Y_1} \frac{dY_1}{dt} \right) \right] \\ &= \frac{\pi X_1}{X_2} \left(r\pi - N_2 r\pi + E_2 R_1 - N_1 r\pi - E_1 R_1 \right), \end{aligned} \quad (1)'$$

where

$$r\pi = \frac{1}{\pi} \frac{d\pi}{dt}, \quad r\pi = rP_1 - rP_2$$

$$\frac{dT}{dt} \frac{1}{T} = RT_1 = (N_1 + N_2 - 1)(rP_2 - rP_1) + E_2 R_1 - E_1 R_1.$$

As we have no information on the income trends and the state of elasticities, the last two terms must be treated as

$$E_1 R_1 - E_2 R_2 = 0.$$

The basic equation then reduces to :

$$RT_1 = (N_1 + N_2 - 1) (rP_2 - rP_1),$$

and we identify India or Asia with country 1. Some impression of the general level of prices in Europe and India can be gathered from column 3 of Table 1. This impression is also supported by the fact that the Company's profits were essentially derived from the exports from India. The average 'current' gross profits on Asian goods, as can be seen from the ratio of the sale of the exports to import values (column 9, Table 1) fluctuated between 200 and 400 per cent. The Company traded on borrowed capital paying 4 to 5 per cent interest. We have no direct evidence on the levels of profitability for imports, though it is possible to construct a price index for some of the commodities. In June 1700, however, in an effort to increase the sale of English manufactures in India the Court of Directors wrote to their servants that they would hold themselves satisfied if 'an ounce of silver here laid out in goods produce on their sale an ounce of silver again immediately.'¹⁷ If the Company was prepared to sell its imports at cost price in India after some half a century of intense sale efforts, it provides strong evidence that rP_1 in the long-run remained less than rP_2 , so that the whole second term is positive. From our analysis of the price elasticity of demand we can assume that $N_2 > 1$ and for any positive value of N_1 the coefficient is also positive, making the entire expression on the right-hand side positive. Thus under normal trading conditions RT_1 tends to be persistently favourable. There is some inconsistency in using a dynamic model to describe a long-run static situation, since by definition T could never have a negative sign. However, the model takes account of the negative sign in the rate of change in trade balance, as it actually happened in our period,

17. Letter Book, X, f. 313, 18 June 1700.

by setting out the factors responsible¹⁸.

In an article published some years ago, I suggested that the Ricardian model can be used in explaining the heavy export of treasure from the West during the mercantilist period¹⁹. Contemporary writers, under the influence of mercantilist thinking devoted a great deal of their attention to the problem of instability in national finance caused by adverse trade balance. Since the same metallic units were used both for domestic currency purposes and international trading, there was very little that could be done in insulating a country either from the effects of its own trade deficit or changes in the international monetary system²⁰. In the contemporary mind there was a close link between the phenomenon of a scarcity of coins and economic depression. The European East India Companies with their large annual shipment of treasure to the East introduced a potential source of disturbance in the Western monetary system and were specially singled out for adverse criticism. That the volume and character of international trade had some relationship with money, prices, and wages was perceived by many mercantilist writers. In a treatise published in 1729, for example, Thomas Prior commented that as gold and silver were more scarce in the East Indies than in Europe, it could be expected that wages and prices of commodities there would be lower than at home. This was the reason why 'we export very few Manufactures to that Part of the World; but to purchase their Commodities are obliged to send Specie thither'²¹. In the correct tradition of the

18. There is also an alternative model available in terms of money balance, i.e.

$$B_1 = P_1 X_1 - P_2 X_2$$

by differentiating this with t we derive

$$\frac{1}{P_1 X_1} \frac{dB_1}{dt} = \frac{B_1}{P_1 X_1} \cdot rP_2 + \left(\frac{N_1}{T_1} + N_2 - 1 \right) (rP_2 - rP_1) + \left(E_2 R_2 - \frac{E_1 R_1}{T_1} \right).$$

For the mathematical proof of the equation see Appendix II.

19. K. N. Chaudhuri, "The East India Company and the Export of Treasure in the early seventeenth century", *Economic History Review*, 2nd series XVI (1963).

20. Fluctuations in bimetallic ratio was obviously one of the major sources of such disturbances. The seventeenth century economic pamphlets are full of discussions on this point.

21. *Observations on Coin in General with some Proposals for regulating the value of coin in Ireland*, by Thomas Prior, printed in J. R. MacCulloch, *A Select Collection of Scarce and Valuable Tracts on Money*, (1856).

early quantity theorists Prior observed that there was a disparity in the bimetallic ratio in Europe and Asia and suggested that this might be equalized by the efflux of bullion from Europe which would cause the prices of Asian commodities to rise in the same proportion. This was not quite the Ricardian adjustment mechanism, but Prior very nearly reached the same conclusion.

That international trade is a function, among other things, of price differentials was stated in even more succinct terms by Henry Martyn. "The cheapest things are ever bought in *India*", he wrote in 1701, "as much Labour or Manufacture may be had there for two Pence, as in *England* for a shilling. The Carriage thence is dear, the Customs are high, the Merchant has great gains, and so has the retailer; yet still with all this Charge, the *Indian* are a great deal cheaper than equal English Manufactures. Every man will buy the best Pennyworth; if this is to be had from *India* bullion will be carried thither"²². Henry Martyn's analysis was very close to the Ricardian theory of comparative advantage, as he ascribed the difference in international prices to labour costs and treated a higher productivity of labour as the same thing as lower 'real' wages²³. We do not have evidence to determine whether it was purely monetary factors or the difference in production functions that accounted for the disparity in the price structure between Asia and Europe. For price differentials in individual items of exports, particularly textiles, the technology of the economies was obviously significant. Henry Martyn, for example, pointed out that the freight costs of raw cotton were the same as those for finished cloth, and yet the latter could not be manufactured in England as cheaply, as English labour was a great deal dearer than Indian. It is perhaps not entirely by chance that the large-scale application of machinery to the production process occurred in the textile industry in Europe, in which case the Indian imports probab-

22. Considerations on the East India Trade, 1701, printed in MacCulloch, *Early English Tracts on Commerce* (Cambridge, 2nd ed. 1952), p. 549.

23. Consider the following passage: "A less part of the price of an equal Indian Manufacture suffices to pay the labour by which the same was procured. Wherefore Indian Manufactures are procured by Labour of less price than equal English Manufacture. The labour here in England bears proportion to the Wages that are given for it, it must be measured by the price, so that labour of less price must be accounted less labour; Indian manufactures are produced by Labour of less price and therefore by less Labour than equal English Manufactures." MacCulloch, *op. cit.*, p. 552.

ly served to map the demand conditions for English entrepreneurs.²⁴

This section may be concluded by raising the question what effects did the imports of treasure have on the Indian economy. The traditional answer has been that the effects of bullion influx were neutralized by hoarding and the oriental penchant for ornaments.²⁵ Again, this is entirely speculative. No evidence is produced on Indian price movements, the volume of annual imports of gold or silver, and the Indian requirements of precious metals for currency purposes in relation to the size of her population. Hoarding probably was a widespread feature of Indian economic life, but there is also evidence that the 'price' of precious metals fluctuated a great deal in India according to trading conditions and did not universally command a premium at all times.²⁶ There were also considerable bimetallic movements of treasure to and from India. Silver, imported from Europe or the Philippines via the galleon trade of South America, often flowed out again to China where the bimetallic ratio was lower than in India.²⁷ In any case, for the Indian sub-continent as a whole, and in relation to its population, neither the total value of foreign trade nor the imports of treasure appeared to have been significantly large, although for individual trading regions where the export goods originated from, the value of such exports may have formed a considerable proportion of their total economic activity.

24. This point has been emphasised by A.O. Hirschman, *The Strategy of Economic Development* (New Haven, Yale University Press, 1958).

25. Blitz, *op. cit.*

26. The point is discussed at length in my article, 'Treasure and Trade Balances'. See also T. Ray Chaudhuri, *Jan Company in Coromandel* (The Hague, 1962), pp. 185-186.

27. Cf. Charles Lockyer; *An Account of the Trade in India* (1711); also Louis Dermigny, *La Chine et l'occident* (Paris, 1964), vol. I.

TABLE I
Seventeenth Century East India Trade
THE ENGLISH EAST INDIA COMPANY'S EXPORTS AND IMPORTS

	Exports from Asia £.	Import: goods to Asia £.	Balance (Exp.-Imp. goods) £.	Import Treasury £.	Total imports £.	Export as % of imports: goods	Exports as % of Total Imports	Total sale value of Exports as % cost value	Export- Imp. total sale value as % of total Imp. (lagged)	Totals lagged 2 years
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1664-65	141,333	39,898(62-3)*	+101,435	135,218	175,116	352	81	234	189	
65-66	157,506	43,343(63-4)	+114,163	75,020	118,363	367	134	54	72	
66-67	13,862	28,534(64-5)	- 14,672	26,745	55,279	50	25	1,900	484	
67-68	49,466	20,621(65-6)	+ 28,845	17,005	37,626	233	129	363	468	
68-69	7,147	8,920(66-7)	- 1,773	3,424	12,344	78	58	942	550	
69-70	139,493	61,933(67-8)	+ 77,560	109,655	171,588	224	81	241	195	
70-71	219,828	68,706(68-9)	+151,122	113,234	181,940	319	121	260	314	
71-72	201,242	83,473(69-70)	+117,770	189,704	273,177	242	74	242	178	
72-73	322,679	117,003(70-1)	+205,676	203,504	320,507	276	100	177	179	
73-74	257,889	104,101(71-2)	+153,788	181,567	285,668	248	90	89	80	
74-75	178,659	39,824(72-3)	+138,835	131,295	171,119	447	137	451	472	
75-76	169,173	53,175(73-4)	+115,998	155,476	208,651	319	81	198	160	
76-77	337,143	114,571(74-5)	+222,572	299,012	413,583	294	81	281	229	
77-78	314,764	139,614(75-6)	+175,150	292,327	431,941	225	73	195	146	
78-79	316,044	102,470(76-7)	+213,574	221,278	323,748	156	98	190	190	
79-80	348,572	95,254(77-8)	+253,318	325,932	421,186	367	83	271	232	
80-81	350,057	50,483(78-9)	+299,574	340,819	391,302	700	89	214	202	
81-82	382,322	66,742(79-80)	+315,580	394,464	461,206	570	83	232	195	

SOURCE : East India Company : Ledger Books, vols. 27-38, (India Office Library, Accountant General's Department, Range 11.)

*The figures inside brackets refer to dates, as the imports are lagged by 2 years.

TABLE 2
PERCENTAGE OF RELATIVE SHARES OF ASIAN EXPORTS IN TOTAL VALUE

	Pepper			Calico		Indigo		Sulphur		Raw Silk		Percentage share of each Ex- port in total
	Cost value %	Sale value %	(3)	Cost value %	Sale value %	Cost value %	Sale value %	Cost value %	Sale value %	Cost value %	Sale value %	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1664-65	13	16	72	65	—	—	4.2	15				
65-66	19	13	62	29	3.2	—	5.2	29				
66-67	—	13	93	77	0.8	2.1	—	0.7				
67-68	12	26	74	56	3.0	4	—	3				
68-69	—	14	95	69	—	4	—	—				
69-70	29	22	48	62	5	6	6	2				
70-71	23	26	60	49	4	7	5	12				
71-72	18	36	67	47	5	5	3	4				
72-73	25	34	61	51	5	3	2	3				
73-74	5	22	76	68	0.9	—	3	2				
74-75	12	13	67	64	5.2	5	1	5				
75-76	29	34	58	54	4	3	4	3				
76-77	16	14	64	68	5	3	2	7	2			
77-78	29	19	61	64	3	3	3	4	5			
78-79	15	6	69	70	3	2	2	3	5	6		
79-80	8	23	76	60	1	0.8	3	4	8	7		
80-81	10	9	77	75	0.8	0.9	0.09	3	5	7		
81-82	16	24	63	55	2	2	2	1	13	13		

SOURCE : East India Company, Ledger Books, vols. 27-38 (India Office Library, Accountant General's Department, Range 11.)

APPENDIX I
CORRELATION MATRIX : SEVENTEENTH CENTURY TRADE VARIABLES

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	1.000000									
2	0.770122	1.000000								
3	0.967903	0.585085	1.000000							
4	0.797100	0.478221	0.824967	1.000000						
5	0.963256	0.787293	0.914425	0.815506	1.000000					
6	0.565973	-0.010569	0.723709	0.619359	0.497419	1.000000				
7	0.142855	-0.035651	0.195654	-0.024201	-0.064635	0.396196	1.000000			
8	-0.597629	-0.466998	-0.575825	-0.434743	-0.497901	-0.489607	-0.613533	1.000000		
9	-0.622103	-0.625962	-0.544312	-0.514614	-0.600815	-0.318261	-0.109193	0.712432	1.000000	
10	0.959880	0.724106	0.935018	0.755825	0.917957	0.566681	0.193579	-0.594853	-0.571010	1.000000
11	0.977017	0.705255	0.964227	0.810287	0.940256	0.594109	0.124293	-0.554898	-0.578916	0.979449
	1.000000									
12	0.750297	0.477801	0.765613	0.560647	0.750036	0.505350	0.080213	-0.185358	-0.067584	0.767786
	0.760052	1.000000								

TRENDS IN INDO-EUROPEAN TRADE IN THE SEVENTEENTH

13	0.764761	0.468400	0.787717	0.579727	0.783976	0.535971	0.003019	-0.184678	-0.108472	0.769394
	0.780652	0.982319	1.000000							
14	-0.493475	-0.399643	-0.469963	-0.313908	-0.401623	-0.460757	-0.714185	0.878787	0.527530	-0.550038
	-0.451442	-0.284525	-0.253659	1.000000						
15	-0.493430	-0.399587	-0.469929	-0.313841	-0.401530	-0.460705	-0.714021	0.870799	0.527472	-0.549954
	-0.451373	-0.284416	-0.253505	1.000000	1.000000					
16	-0.053307	-0.146466	-0.009977	0.044467	0.054777	0.090669	-0.432088	0.082736	-0.054994	-0.127275
	-0.033976	-0.059145	0.101023	0.216659	0.217012	1.000000				
17	0.382422	0.317130	0.361354	0.239142	0.350100	0.402922	0.430079	-0.715031	-0.501559	0.432524
	0.340002	0.233371	0.266702	-0.843505	-0.843242	0.229954	1.000000			
18	0.756169	0.638159	0.709929	0.658058	0.786585	0.454527	0.045075	-0.418067	-0.393720	0.720460
	0.694663	0.705159	0.694766	-0.513959	-0.513804	-0.074375	0.478060	1.000000		
19	-0.903753	-0.676706	-0.882368	-0.778191	-0.905560	-0.555373	-0.078038	0.550392	0.639397	-0.851623
	-0.659901	-0.726443	-0.743376	0.476416	0.476365	0.013985	-0.435028	-0.796825	1.000000	
20	0.833391	0.544871	0.844833	0.781379	0.853177	0.502807	-0.022005	-0.347010	-0.293648	0.806461
	0.837729	0.800717	0.804750	-0.268290	-0.268398	-0.087196	0.139092	0.676046	-0.833238	1.000000

Level of significance for R at or above 0.460.

APPENDIX I

KEY

Correlation Matrix:

Seventeenth Century Trade Variables—18 Observations

1. Exports from India.
2. Imports of merchandise.
3. Balance (Exports-imports).
4. Imports of treasure.
5. Total imports.
6. Exports as % of imports merchandise.
7. Exports as % of total imports including treasure.
8. Sale value of exports in London as % of cost value in India.
9. Total sale value of exports as % of total imports.
10. Textiles, number of pieces exported from India.
11. Textiles, cost value.
12. Textiles, Number of pieces sold in London.
13. Textiles, sale value in London.
14. Textiles, Unit Price cost.
15. Textiles, index of cost price.
16. Textiles, index of sale price.
17. Textiles, ratio of sale price/cost price.
18. Pepper, quantity sold.
19. Pepper, index sale price.
20. Time.

APPENDIX II

We use the symbols given on p. 17.

$$B_1 = P_1 X_1 - P_2 X_2$$

$$\frac{dB}{dt} = \left(P_1 \frac{dX_1}{dt} + X_1 \frac{dP_1}{dt} \right) - \left(P_2 \frac{dX_2}{dt} + X_2 \frac{dP_2}{dt} \right)$$

$$= \left[P_1 \left(\frac{\partial X_1}{\partial \pi} \frac{d\pi}{dt} + \frac{\partial X_1}{\partial Y_2} \frac{dY_2}{dt} \right) + X_1 \frac{dP_1}{dt} \right] \\ - \left[P_2 \left(\frac{\partial X_2}{\partial \pi} \frac{d\pi}{dt} + \frac{\partial X_2}{\partial Y_1} \frac{dY_1}{dt} \right) + X_2 \frac{dP_2}{dt} \right]$$

$$\frac{1}{P_1 X_1} \frac{dB}{dt} = \frac{P_1}{P_1 X_1} \left(\frac{\partial X_1}{\partial \pi} \frac{d\pi}{dt} - \frac{\pi}{\pi} + \frac{\partial X_1}{\partial Y_2} \frac{dY_2}{dt} \frac{Y_2}{Y_2} \right)$$

$$- \frac{P_2}{P_1 X_1} \left(\frac{\partial X_2}{\partial \pi} \frac{d\pi}{dt} - \frac{\pi}{\pi} \frac{X_2}{X_2} \frac{\partial X_2}{\partial Y_1} \frac{dY_1}{dt} \frac{Y_1}{Y_1} \frac{X_2}{Y_1} \right)$$

$$+ \frac{1}{P_1 X_1} \left(X_1 \frac{dP_1}{dt} - X_2 \frac{dP_2}{dt} \right)$$

$$= -N_2 r \pi + E_2 R_2 - N_1 r \pi \frac{1}{T} - E_1 R_1 \frac{1}{T} + \frac{1}{P_1 X_1} X_1 \frac{dP_1}{dt} \frac{P_1}{P_1}$$

$$- \frac{1}{P_1 X_1} X_2 \frac{dP_2}{dt} \frac{P_2}{P_2}$$

$$= -N_2 r \pi + E_2 R_2 - N_1 r \pi \frac{1}{T} - E_1 R_1 \frac{1}{T}$$

$$+ r P_1 - r P_2 \left[1 - \frac{(P_1 X_1 - P_2 X_2)}{P_1 X_1} \right]$$

$$= \frac{B_1}{P_1 X_1} r P_2 + \left(\frac{N_1}{T} + N_2 - 1 \right) (r P_2 - r P_1) + \left(E_2 R_2 - \frac{E_1 R_1}{T} \right).$$

Comments on "Some Trends in India's Foreign Trade in the Seventeenth Century"

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The following comments are based on the statistical work carried out by M. F. Fuller (see Statistical Appendix). They are concerned primarily with the specification of the model advanced by Dr. Chaudhuri. The data used for the regression analysis were tabulated in an approximate form from Figs. I and II in Dr. Chaudhuri's paper.¹ As will be easily seen, the major alteration in the results concerns the significance of the time trend in the equation of "demand" for textiles. The sales and purchase of textiles were showing an upward time trend and failure to take this into account would magnify the value of the elasticity of demand.

Although these regression equations relate apparently to a simple model of demand under the assumption that supply variations are random over time, they do raise some questions about the proper specification of the theory underlying the model, particularly since Dr. Chaudhuri draws rather far-reaching conclusions from this model and his regression equation showing a high degree of correlation between values of exports and lagged values of imports. In particular, Dr. Chaudhuri wants us to conclude that the latter relationship shows that the East India Company could not have depended very much on borrowings in India for the financing of its India trade. Consider, however, the following model: the factors of the East India Company operate in a highly imperfect capital market; they have a certain amount of capital of their own (accumulated over time) but they can borrow from Indian bankers

1. Only the regression of purchases in India on the cost of the commodities in India could be worked out because Dr. Chaudhuri does not provide the data of sales in London.

at rates which go up after a certain limit (fixed with reference to the volume of their own assets) of borrowing has been reached.² The price of pepper or of textiles is determined in India by factors which are largely outside the control of the East India Company. The Company's factors then spend their limited (internal and external) financial resources on the purchase of pepper and textiles, deciding to call a halt at a point where the marginal cost of acquiring the commodity becomes too high because the price of the commodity plus the marginal cost of borrowing becomes too high.³ When the factors ship the commodities to England the East India Company adds a mark-up (which may be different from commodity to commodity but is rather inflexible for a particular commodity in normal years) to the purchase prices in India and sells the whole stock to the wholesale dealers in London. Thus the factors' behaviour in India constrained by financial limits appears in the guise of a demand relation in London (notice the close similarity of the two regression equations relating to pepper on p. 10 of Dr. Chaudhuri's paper. If demand in London was the only systematic influence on the behaviour of purchases in India and sales in London, then one would have to postulate remarkable powers of anticipation of the market and coordination of the factors' purchases in India in order to get such a close relationship. On the other hand, if the causal mechanism sketched by us worked then one *would* get such a close relationship). This model would also lead under reasonable assumptions to a high degree of correlation between values of exports from and values of lagged imports into India by the East India Company.

Notice that this alternative model is not just another hypothesis to knock the simple (and attractive) demand relations derived by Dr. Chaudhuri: there is a certain amount of evidence for it in his own paper. For example, in Fig. II, we notice that the ratio of scale price to cost price tends to decline over time in the case of pepper whereas it remains more or less steady in the case of textiles. We

2. It is to be noticed that for the validity of our reasoning later, all that is needed is that the capital market should be imperfect, implying that the cost of borrowing goes up significantly after a point.

3. Notice both the instruction of the Court of Directors to the factors in Surat forbidding them to buy pepper except at the prices below 2.5d. per lb and the regret of the factors at the instruction! (p. 3).

have already noticed that there was a strong upward time trend in the case of purchase of textiles. If we had a model in which the factors purchased only textiles and pepper and in which their expenditure on two commodities was determined both by past purchases and by change in the relative price to cost ratio of the two commodities, then we would normally expect a significant upward trend in the purchases of textiles and a significant downward trend in the purchases of pepper if the relative price to cost ratio was changing in favour of the former. But since there were commodities other than textiles and pepper purchased by the factors of the Company, we may not observe a downward trend in the purchases of pepper. A significant upward trend in the purchases of textiles (which were after all the most important single commodity bought by the Company) whets our expectation that this model may explain some part of the observed pattern in the trade of the East India Company.

To sum up this part of our comments, while the arguments advanced by Dr. Chaudhuri in favour of his demand models are plausible, they are not conclusive. In particular, an alternative model which lays greater stress on the imperfection of the capital market in India, a possibly full-cost type pricing policy of the East India Company, and price determination in India independently of the influence of the East India Company has not been refuted by Dr. Chaudhuri's data. Generally speaking, economic historians do not seem to have even begun to look at data which may have bearing on the alternative model.

For myself, I would be surprised if the trading behaviour of the East India Company was not influenced by both sets of factors: it would try to limit its purchases by reference to both its own capital resources and the finance it could raise without too much cost from outside. Having brought the goods to England, it would in 'normal' years try to follow conservative pricing policies—basing its prices on cost by applying a mark-up which might be variable from commodity to commodity depending on its perishability or volatility of demand. It would in years of abnormally high demand try to charge what the market would bear; in cases of perishable commodities, if demand really slumped, it might be prepared to take a loss rather than face the risk of further loss through storage and

further price falls in future. In the case of textiles it was almost certainly facing a rather steadily growing market during the period under consideration; but the very dependability of the textile market in comparison with the pepper market would evoke efforts on the part of the factors in India and influence the supply conditions there as far as the East India Company was concerned. Without further knowledge about all the omitted variables—such as the degree of imperfection of the capital market, the cost involved in the storage of different commodities, the relations between the wholesale and the retail prices, the influence of the East India Company on supply conditions in India—I would be loath to assent to the simple model advanced by Dr. Chaudhuri.

Having disposed of the substantive part of my comment, I shall deal briefly with the rest of Dr. Chaudhuri's paper. There is a certain bit of unnecessary algebraic notation in Dr. Chaudhuri's paper, which can be lopped off with advantage: the 'matrices' on p. 17 do not play any useful part in the subsequent discussion. On p. 14 Harry Johnson's 'equation' is really an identity assuming that the changes are marginal. To get any results out of it, one has to make assumptions about the relations between variables or estimate the values of the parameters by acceptable methods. Dr. Chaudhuri begins with the heroic assumption that the influence of changes in income on changes in trade balance was zero, p. 16. The principle of indifference because of insufficient knowledge invoked there is no more valid in economic history than in other fields of systematic knowledge. In any case, Dr. Chaudhuri's assumption sounds distinctly dubious in the case of trade between India and England as represented in the accounts of the East India Company. If there was a strong upward trend in the purchases of Indian textiles in England and if at least part of it was due to increases in real income leading to consumption of more cotton cloth, then this change by itself would tend to make the trade balance between India and England more adverse to the latter; in order to neutralise it, one would have to adduce evidence of an equal increase in demand for European goods (or rather goods from 'the rest of the world') imported by the East India Company because of growth in incomes in India. Unless this vital question is cleared up, the rest of the section cannot be based on the algebraic identity quoted on p. 17.

I found the use of conventional trade theory at the beginning at the end of paper slightly odd. On p. 14, for instance, the equation $MV = PT$ does not become an equation unless one fixes the value of V or P or M (depending on various versions of it). On p. 15, the latter part of the statement that 'A glance at our original two matrices demonstrates that trade between A and B would hardly have taken place unless there were prospects of profits', is a half-truth; it does not depend on the way the matrices on p. 11 were made up nor does it depend on the Ricardian theory of comparative costs to which reference is made in the same paragraph. The statement is a half-truth because trade can and does take place between 'unequal partners' (the title of a recent book by Lord Balogh).

The last two paragraphs illustrate the kind of objections one can raise to the way in which Dr. Chaudhuri has handled trade theory (neoclassical or Ricardian) in his paper. It is unnecessary to multiply examples taken from other parts of the paper.

I. Statistical Appendix

Seventeenth Century Indian Trade

The regressions fitted to the data on price paid (p) and quantity acquired (q) (in India) take three forms :

$$\left. \begin{aligned} (i) \log q_t &= \alpha_1 + \beta_1 \log p_t \\ (ii) \log q_t &= \alpha_2 + \beta_2 \log p_t + \gamma_2 t \\ (iii) \log \left(\frac{q_t}{q_{t-1}} \right) &= \alpha_3 + \beta_3 \log \left(\frac{p_t}{p_{t-1}} \right) \end{aligned} \right\} \begin{array}{l} \alpha, \beta, \gamma \text{ constants;} \\ t \text{ is time in years} \\ (1664/5 \text{ is } t = 1) \end{array}$$

(i) fits a constant elasticity line to the data, and to give good results, the fluctuations in the Company's demand schedule must be small compared with the fluctuations in the supply curve

(ii) and (iii) both use the assumption that the demand schedule shifts upwards by some constant factor (e^{γ_2} or I^{23}) each year, but gives different results when the relationship is inexact. For an exact relationship, however, when

$$\log q_t = \alpha_2 + \beta_2 \log p_t + \gamma_2 t,$$

then

$$\log q_{t-1} = \alpha_2 + \beta_2 \log p_{t-1} + \gamma_2 (t-1);$$

thus,

$$\log \left(\frac{q_t}{q_{t-1}} \right) = \beta_2 \log \left(\frac{p_t}{p_{t-1}} \right) + \gamma_2.$$

[Thus in equation (iii) β_3 is the estimate of elasticity of demand.]

Equation form	Pepper	Textiles
(i)	$\log q_t = 32.3 - 7.2 \log p_t$ (7.4) (1.7) $R^2 = 0.54$ $\bar{R}^2 = 0.48$ $DW = 2.7$	$\log q_t = 21.1 - 3.4 \log p_t$ (3.2) (0.7) $R^2 = 0.60$ $\bar{R}^2 = 0.55$ $DW = 0.6$
(ii)	$\log q_t = 29.5 - 6.6 \log p_t + 0.03 t$ (10.7) (2.3) (0.09) $R^2 = 0.54$ $\bar{R}^2 = 0.45$ $DW = 2.6$	$\log q_t = 18.4 - 3.0 \log p_t + 0.12 t$ (2.4) (0.5) (0.03) $R^2 = 0.80$ $\bar{R}^2 = 0.76$ $DW = 1.0$
(iii)	$\log \left(\frac{q_t}{q_{t-1}} \right) = 0.01 - 4.7 \log \left(\frac{p_t}{p_{t-1}} \right)$ (0.56) (2.9) $R^2 = 0.15$ $\bar{R}^2 = 0.04$ $DW = 3.4$	$\log \left(\frac{q_t}{q_{t-1}} \right) = 0.04 - 2.7 \log \left(\frac{p_t}{p_{t-1}} \right)$ (0.15) (0.3) $R^2 = 0.87$ $\bar{R}^2 = 0.85$ $DW = 1.6$

NOTES: q_t , p_t are in units as tabulated. Figures in brackets below regression coefficients are their standard errors. $\bar{R}^2$ is the correlation coefficient adjusted for degrees of freedom and DW is the Durbin-Watson statistic for testing serial correlation. [logs are to base e].

Interpretation of Results

PEPPER

The difference between the first result (i) and text result [p 12, eq. (IA),] is very probably due to differences in the values used (see additional note) 1666/7 and 1668/9 when the purchases fell to very low mounts, recorded as 0.01 million lb. in each case here. Because logs are taken, the results will be very sensitive to the treatment of these proportionately extremely low values.⁴

However, in equation (i) the elasticity estimate is certainly significantly negative at 5% and 1% levels (using a Student's t test), although there is also very possibly significant negative serial correlation of the regression equation errors [the Durbin-Watson statistic is in the "indeterminate" zone].

4. Differences in the constant term may also arise because of differences in units used [e.g. thousand instead of million lbs.] or the base of the logarithms.

In equation (ii) these points still apply but the added time trend is not significant at any reasonable level. The adjusted correlation coefficient falls. It is thus not surprising that equation (iii) gives such a poor fit; the size of the elasticity estimate is no longer significantly different from zero [even at 10% level], and the Durbin-Watson statistic is in the zone for significant negative serial correlation at 5% level.

TEXTILES

The values of R^2 and $\bar{R}^2$ show that equation (i) has a reasonably good fit to the data and the regression coefficient for the elasticity estimate is again significantly negative at 5% and 1% levels. However, the Durbin-Watson test shows significant positive serial correlation of errors (at 5% level).

In equation (ii) the above remains valid, but the fit of the equation is better than for (i). The coefficient for the time trend is significantly positive at 5% and 1% levels. The *DW* statistic is increased, but still shows significant positive serial correlation as before.

Equation (iii) provides a superior fit to equation (ii); the elasticity estimate is again reduced but increases in significance. The serial correlation of equation (i) and equation (ii) is no longer present [using the *DW* 5% test, we can accept the hypothesis of no serial correlation]. Equations (ii) and (iii) together suggest an upward shift in the demand curve; 12% [equation (ii)] and 4% [equation (iii)] per annum in each case, although not too much importance should be attached to the size of the coefficients. However, analysis of the original data suggests that the estimate of 4% is probably nearer the true value, as this seems more consistent with the trend increase in purchases.

Additional Note

DATA USED

The data used in the regressions is taken from the graphs included in the article. This means that the values used may be different from the actual values, and as explained above, the results will be

very sensitive to the two low values in the pepper case. There are reasons for doubting the comparability of the price estimates for these two years (1666-67 and 1668-69) with those for the other years, because of the composition of sales, and the possibility of price limits such as that mentioned in the text.

SERIAL CORRELATION

The Durbin-Watson statistic shows the possibility of serial correlation in 5 out of 6 regression results. This requires further analysis.

The negative serial correlation recorded in the pepper regressions seems largely due to the two years when purchases were very low relative to the other years. It would perhaps be wise to repeat the regressions with the original data instead of the estimates taken from the graphs.

In both cases the serial correlation measured is between the error estimates adjacent in time, because of the order of the data is a time order.

While there may be some relevance in this approach for analysing possible trade cycle or stock adjustment mechanisms affecting the year-to-year shifts in the demand schedule (with positive serial correlation possibly indicating fairly long cycles, and negative serial correlation a year-to-year adjustment) there is also a need to analyse the regression errors in order of price-level rather than in order of time. When this is done, it can be seen that in both cases negative errors are concentrated amongst extreme values (in the case of pepper, this is true at the upper end for the two years of low purchases only) when looking at equations (i) and (ii) for each commodity, in a way roughly indicated by Fig. 1. This suggests that the demand schedule assumption of constant elasticity may need modification, higher elasticity being suggested at high prices and lower elasticity at low prices. This conclusion is rather tentative in view of the note about the data.

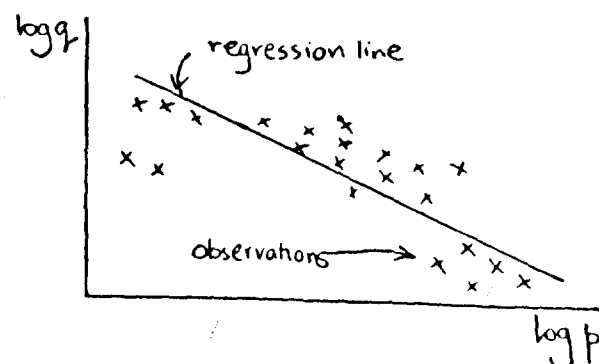


Fig. 1

DATA OF REGRESSIONS⁵

Year	Pepper		Textiles	
	Mn. lb	Cost price index	1000 pieces	Cost price index
1	2	3	4	5
1664/5	1.15	100	274	100
65/6	2.21	83	293	89
66/7	0.01	107	15	207
67/8	0.27	131	156	61
68/9	0.01	108	5	200
69/70	2.99	86	236	76
70/1	4.19	75	425	84
71/2	2.92	81	538	67
72/3	7.52	70	558	94
73/4	0.82	105	613	85
74/5	1.32	100	425	75
75/6	4.43	70	250	105
76/7	4.58	76	671	85
77/8	8.12	72	522	98
78/9	4.35	72	644	90
79/80	2.77	62	746	95
80/81	2.99	72	732	98
1681/2	5.12	76	676	94

5. As taken from graphs of the text.

Early Indian Historiography : A Conspiracy Hypothesis¹

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The question I raise for discussion here is why Indians of the ancient and medieval periods did not address themselves seriously to the critical study of their past? This question has been raised many times before by historians and others, and, notwithstanding the argument presented here, it will be posed again in the future. Before entering upon a necessary clarification of some of the elements of the question, defense of the query itself may be necessary; for this question can be answered by another: History? Who needs it? The counter question is not meant to be frivolous, for not all would agree that the study of history requires no justification, that it is somehow natural to literate men, hence why not Indians or that the study of a society's past by its members has such obvious interest and utility as to require no justification. History—a critical understanding of the past—is, of course, neither “natural” nor necessary. However, in the case of India, exploration of the question along the lines I have suggested serves to underscore certain aspects of Indian society and culture which are receiving notice from historians.

There are, in fact, several reasons for raising the question. One is that given the rich and creative intellectual tradition of early India—which needs hardly be elucidated—it is striking that historical thought and scholarship should not have been represented in some greater measure. Another reason is that a good deal of nonsense has been written based upon the absence or deficiency of an early

1. This argument was published in brief form as part of the proceedings of a seminar convened in 1961 by the Institute of Traditional Cultures, Madras, directed by K. A. Nilakanta Sastri. The seminar was entitled, “Historiography: India and the West;” it was reported in *Bulletin of the Institute of Traditional Cultures*, Part II, 1962 (Madras: University of Madras, 1962), pp. 253-308.

Indian historiographical tradition. A presumed "timelessness" of the Indian mind has often been posited by some Europeans and Indians attempting to explain or justify particular world-views or ideological aberrations in terms of their understanding of early Indian society and culture, including its lack of a sound historiographical tradition. Finally, the question arises as a matter of craft concern in the mind of the historian of India, even those of us who are not specialists in ancient India, because, unlike students of other ancient, literate and continuing civilizations, we find almost no historically informed views of the past among the literary remains of the ancient Indian past. We are, thus, inexplicably, denied a sense of contact with a kindred intellectual activity enjoyed by scholars of ancient China, the classical European world, and Islam.

Answers to the question of why India lacked a significant historiographical tradition in ancient times vary according to the sense in which the term "history" is used. To none would the relatively exacting standards of historical plausibility which exist today obtain as a criterion for evaluating alleged works of history of a millenium or even two centuries ago. And only a few of those who seek the "soul of India" would argue that ancient Indians had no "sense of history". We may dismiss the latter view with its conception of an Indian mind quirked by an inability or unwillingness to cognize time. Between these two positions is a wide range of intellectual productions which have been called "history." In two recent and important publications, some of the relevant issues bearing upon the question are considered, and the views expressed merit attention because in both there is the assertion that there was an historiographical tradition worthy of the name in ancient Sanskrit literature. The editor of one of the works, *Historians of India, Pakistan and Ceylon*,² Professor C. H. Philips, correctly pointed out that the essays of the volume should dispose of the notion that the peoples of early India had "no sense of history." However, there are no very cogent explanations offered for why the ancient Indian "sense of history" was successfully expressed in only one major, and rather solitary, work, the Kashmir Chronicle of

2. In the series, *Historical Writings on the Peoples of Asia* (London : Oxford University Press, 1961), p. 4.

Kalhana. In the second work, V. S. Pathak's *Ancient Historians of India : A Study in Historical Biographies*,³ the claim is advanced that the *charita* works analyzed were valid historical works, not essentially fantasy, eulogy, or entertainment. Yet, the author demonstrates with elegance and erudition how these works, claimed as historical, followed the canons of Sanskrit poetics meticulously and utilized few factual details of the lives of the protagonists beyond those required to identify them unambiguously. The *charita* examined by Pathak and other classes of Sanskrit literature provide clear evidence to support the view that ancient Indians sought in various literary ways to deal with their pasts.

How this was done is the subject of a major essay in the Philips volume by R. C. Majumdar.⁴ Of the various classes of historically relevant Sanskrit language materials, the *purāṇas* are most important. Literary conventions divide this largest single class of Sanskrit writings into eighteen major works and an equal number of minor ones (*Upapurāṇas*). It is not bulk alone which gives this class of Sanskrit literature its significance for the historian : no other segment of ancient Sanskrit comes closer to what might be "historical." The importance of the puranas was noted by Kautilya in the *Arthasāstra*, where purana is regarded as "*Itihāsa-veda*" and second in importance only to the four Vedas. The term "itihāsa," which has come to mean history, is quite comprehensive in the *Arthasāstra*, for it comprehends *purāṇa* and, among other things, *dharmaśāstra* and *arthasāstra*. These constituent elements of Kautilya's idea of *itihāsa* were, in later times, separated into independent bodies of knowledge with *itihāsa* being characteristically joined to *purāṇa*. *Itihāsa-purāṇa*, even as a separate body of knowledge, lost little of its older comprehensive character, and, for the historian, only one of the subjects dealt with is of central importance, namely, the genealogies of royal dynasties (*vaṃśānucharita*). Moreover, the

3. (New York : Asia Publishing House, 1966).

4. The essay is entitled, "Ideas of History in Sanskrit Literature," pp. 13-29.

itihasa-purāṇas did not become fixed texts until perhaps the eighth century when some of them became the basic authorities in matters of conduct, religion, and philosophy. The *purāṇa*, "ever old and ever new," was constantly subject to change by *Sūtas* and *Māgadhas*, royal panegyrists and genealogists, who are the special custodians of the *purāṇa*. In the hands of these specialists, dynastic lists changed; presumably there were reinterpretations as well as errors in transmission. Yet, there is in the *itihasa-purāṇas* a core of royal genealogical information which is maintained at least until the eighth century or so when *purāṇas* are themselves fixed.

To the *itihasa-purāṇas*, with their concern for genealogy and hero stories, may be added other varieties of early literature which were basically similar. These are genealogical traditions from various parts of Northern India, notably from Nepal, Kashmir, Assam, and Gujarat, which preserve lists of rulers. Historical biographies, as noted above, constitute still another group of historical literature, but possess a greater measure of literary quality than the *purāṇas*. Among these works are the famous *Harsha-charita*, a prose work, and a number of works in verse dealing with rulers in Bengal, Gujarat, and the northern portions of the Deccan. From Buddhists and Jains there are similar traditions preserved in the *Jatakas*, or birth stories of Siddhartha, and the *Prabhandas*, or collections of Jain stories which derive from earlier genealogical lore. And finally, at a somewhat later period, one can include the lengthy introductions of stone and metal inscriptions, *prasastis*,⁵ which often contain the best summaries of genealogical information available for rulers until quite late in the medieval period.

The *itihasa-purāṇa* literature and the other classes of literature mentioned above are, at their best, *vamśa*, or genealogical lists for ruling families. The consensus among scholars who have used this material is that the useful genealogical information is frequently

5. For a good recent discussion of epigraphical evidence, see D. C. Sircar, *Indian Epigraphy*, (Delhi: Motilal Banarsidass, 1965).

buried in myth and hopeless exaggeration. In its nature this literature is neither "objective", nor accurately descriptive, nor analytical. It is the work of men who serve a ruler, or a religious sect, whose concern is with reflecting and maintaining a sponsor's position. The partiality and narrow purposiveness of this class of literature makes its utilization as historical material hazardous.

The one great and solitary exception to this characterization of earlier Indian literature is the Kashmir Chronicle of Kalhana in the 12th century. This work has received impressive notice since the late 19th century, and it continues to excite the admiration of historians as may be seen from A. L. Basham's essay in the Philip's volume.⁶

The Kashmir Chronicle, *Rājataranginī*, as Basham suggests, may reflect some special conditions extant in that part of India at the time. Among these conditions are propinquity to Tibetans, Buddhists, and even Chinese all of whom possessed a "stronger sense of history" as Basham puts it, than Hindus. Moreover, it is quite likely that Kalhana and other intellectuals of his day had some familiarity with the Muslim chronicle tradition. As regards these suggestions, which Basham offers tentatively, it may be pointed out that, Tibetans apart, Hindus elsewhere in India were exposed to Buddhists, Chinese and Muslim influences after the 12th century without producing similar works.

Kalhana's purpose in the Kashmir Chronicle is an explicit one: to provide a connected account of what had become fragmentary. He used extant chronicles, naming twelve in all; he also used inscriptions and oral traditions. Finally, he reports events to which he was himself a witness. While there is much that is fanciful and exaggerated in the work, including, for example, one ruler, Ranāditya, who ruled for 300 years, Kalhana achieves much of his expressed purpose of the Chronicle: to establish the true account of kings and events in contrast to vague and conflicting tradition. Moreover, Kalhana as chronicler is ever the pious Brahman, and the work has a didactic and orthodox focus. His history comprehends

6. The essay is entitled, "The Kashmir Chronicle," pp. 57-66.

almost the entire traditional era of the *kaliyuga*, that is from about 3000 B. C., and his overall perception of the era is traditional in the sense of framing his narrative within the context of progressive moral degeneration and accepting the causal relevance of *karma* and fate (*vidhātṛ*) or divine intervention.⁷

There can be little argument with Basham's appreciation of the Kashmir Chronicle as an excellent example of the *mahāvaṃśa* tradition, that is the utilization and collation of earlier genealogical accounts by a writer seeking to present a continuous narrative account of the past. But is the Kashmir Chronicle basically different from the *itihasa-purāṇa* tradition which most historians have dismissed as almost without usefulness owing to the uncritical intrusion of myth and legend in the genealogies forming its basis? The answer, I submit, is that there is no fundamental difference either in terms of the "purpose" or the nature of the Kashmir Chronicle and the *itihasa-purāṇas*.

Professor N. Subrahmanian of the University of Madras, has raised the question of the "purpose" of the composers and transmitters of puranas, *purāṇikas*. Subrahmanian argues against the historicity of the *itihasa-purāṇas*, saying that the *purāṇika*, like the historical novelist of our day is concerned with delighting and entertaining and hence permits fiction and fantasy to dominate facts.⁸ I think that this is correct, but is this really very different in Kalhana or Jain writers, of whom Subrahmanian approves, whose didactic purpose is so conspicuous in their accounts. I am inclined to lump together the Kashmir Chronicle, the prose and verse works on biography, the Jain and Buddhist chronicles, the *itihasa-purāṇas*, and other genealogical works as works which, with varying success, represent historical explanations for certain conditions in the world of the ancient Indian. These works may be (in fact they are) unconvincing, but they are historical. In this connec-

7. *Ibid.*, p. 64.

8. *Bulletin of the Institute of Traditional Cultures*, *op. cit.*, p. 259.

tion it seems well to bear in mind that history, as that term has been understood in the recent past, that is "scientific" or "objective" history is everywhere in the world a relatively recent development. What passes as history, of literature produced before the 19th century, is often not interesting to us as valid historical explanation, but rather as historical material which with other kinds of evidence forms the source for the contemporary historian. I am saying, in other words, that there was a historiographical tradition in ancient India; hence I agree with the assertion of Philip's to which I have referred above. However, I would insist that this historiographical tradition was one of very poor quality. In our present understanding of things historical, where scientific or objective history dates only from the 19th century (and is not even now everywhere the model), we may and we do distinguish "poor" history from "no" history. We must agree with Keith's assessment that there was a historiographical tradition in ancient and medieval India, but that it was impoverished both in quantity and quality.⁹ I further submit that where we can identify a relatively good chronicle, such as the Kashmir Chronicle of Kalhana, it is a mistake to say, as R. C. Majumdar has said, that it is an "accident" that more men like Kalhana did not produce more of the same relatively high quality work. I would say that it is much more an "accident" that we have the Kalhana chronicle when we consider some of the problems which may have prevented the writing and preservation of good chronicles.

When I refer to the problems which may have inhibited the writing and/or preservation of *good* historical literature in ancient and medieval India, I do not refer to deficiencies in the processes of Indian thought. I deny that the ancient Indian intellectual tradition was "spiritual" to such a degree as to preclude systematic concern with India's changing cultures and institutions. Such obviously "secular" concerns are abundantly expressed in the great *Dharmasāstras* as well as the regional ones of the medieval period. They are also addressed in the *smṛiti* literature and in the *āgamic* litera-

9. A. B. Keith, *A History of Sanskrit Literature*. (Oxford: Clarendon Press, 1928), p. 144.

ture of medieval Hindu sects as well. I cannot take seriously the argument that the "Indian mind" which conceived the idea of the *mahāyuga* was necessarily dominated by an ethereal orientation with a peculiar emphasis upon "spatial" over "temporal" relationships.¹⁰ The cyclic *mahāyuga* idea is often cited to support such assertions. According to this conception, human society passes in a cosmically determined fashion through four stages of diminishing general morality until in the final stages, the *kaliyuga*, there is a complete destruction of man and his universe and a new and pure beginning made. The *mahāyuga* conception may be viewed in a variety of ways which do not require a peculiar Indian mind, unable to perceive temporal relations. Other civilizations as diverse as China and Greece held cyclical theories of cosmic change without being temporal, and the *mahāyuga* idea should be viewed more narrowly as a poetic means for elaborating the personalities of the great puranic deities Siva and Vishnu rather than as a symptom of the problem with time for the early Indian intellectual.

What then are the problems or conditions in early Indian society and culture which inhibited, indeed, all but prevented the writing and preservation of good chronicles or histories? I would say that there were three important inhibiting elements: (1) the nature of the political system; (2) the role of the priestly elite as stewards of Indian tradition; and (3) related to priestly stewardship, the nature of the transmission of tradition.

Views of the political system of early India have been undergoing important changes in recent years. Until quite recently, it has been the tendency of Indians who study their own history to vastly exaggerate the power and the administrative and military effectiveness of early Indian states. Good examples of recent scholarship which correct the older view of the power of the ancient Indian state and the degree of integration which formal political institutions allegedly contributed to early Indian society are R.S. Sharma's monographic *Indian Feudalism*, and Romila Thapar's general, *A*

10. A. de Riencourt, *The Soul of India*, (New York: Harper and Brothers, 1960) pp. 106 ff. is a good example of this; the writings of C. G. Jung exhibit the same quality.

History of India.¹¹ Nevertheless, one encounters, even as recently as 1960, in the important two volume work edited by G. Yazdani, *The Early History of the Deccan*¹², a work which attributes to medieval kingdoms of the Deccan a degree of overall royal power and centralized, bureaucratic control which cannot be supported by the evidence and borders on fantasy at times.

It is as incorrect, however, to go the opposite extreme of denying that ancient and medieval Indian society was affected by the political system. Thus, N. Subrahmanian has stated:

History has been mainly political history . . . , and early societies, if they were so inclined, could have written political histories of a sort e.g., "Thucidides, Caesar" . . . However political history . . . gains significance only in a society which is politically minded; Indian (Hindu) society which is largely non-political in character, i.e., a society which is minimally influenced by the political fortunes of the state, therefore, could not interest itself in rearing a tradition of political history.¹³

Underlying such a proposition is the quite proper identification of other areas of society and culture which provided greater integration and continuity to Indian life than the political system as a "state". But the idea that early Indian society was "non-political" is, to my mind, a quite incredible formulation. I grant that this formulation provides for one who holds it a partial explanation for why there was no strong chronicle or historical tradition in India, the argument being that there was little concern with formal political institutions and political power, thus there was never developed a body of inquiry into the nature and evolution of such things. Such a view, however, fails completely to deal with the organization of

11. *Indian Feudalism*. (Calcutta: University of Calcutta, 1965); *A History of India*, vol. I. (Penguin Books, 1966).

12. G. Yazdani (ed.), *The Early History of the Deccan*, 2 vols. (London: Oxford University Press, 1960). See the present author's review in *The Journal of Asian Studies*, vol. 21, no. 3 (May, 1962), pp. 223-4.

13. *Bulletin of the Institute of Traditional Cultures*, op. cit., p. 256.

power which Indian society, like all societies, modern and ancient, had as one of its tasks. Few of us could envisage a society, any society, which did not have some kind of political organization. Early India, with its warriors and kings, its forts and capitals, its ministers, and the *nīti* literature which purports to deal with these things is certainly not such a society. Neither the exaggerated importance of the state and political institutions of alleged imperial scale which, as I have said, represents the mainstream of conventional historical scholarship, nor early India's presumed concern with individual salvation and general morality, nor, finally, the integratively significant functions of social and religious organizations—none of these things should blind us to the nature of political system which prevailed in early India.

An adequate analysis of the political system of early India does not yet exist; there are many aspects of this system which are very imperfectly understood. Yet, I would offer the following few generalizations pertaining to the political process of early India. First, it is clear that society was highly localized in regard to its dominant social arrangements, culture, and effective government. Large spatial units of reasonably well integrated society, culture, and government are rare until late in medieval times despite some rather heroic historical reconstructions of great empires from Mauryan times to the Mughal period. Second, even within the local political system of early India, political power and functions were frequently and for long periods vested in what cannot be called formal political institutions. Among these were the village settlements of locally important persons as Brahmans and respectable agricultural castes, great itinerant merchant associations, and other caste and professional assemblies. Political power and attendant political functions thus fragmented among essentially non-political institutions were in some places and for brief periods significantly reduced under Muslim rule, but the relatively autonomous power of numerous local warriors throughout the subcontinent was not eliminated until the nineteenth century and the establishment of effective British control.

A third generalization which may be suggested bears significantly upon my argument about the dearth of good chronicles and history in early India. This is the relationship between the warrior ruler

and the priest. When I say priest, I refer primarily to the Hindu priestly caste, the Brahman; but I would also include Jain and Buddhist monks who formed the sacerdotal elite in many parts of India during the ancient period. Jain and Buddhist leaders appear not to have differed essentially from the Brahman in respect to their relations with local warrior power.

Two factors in the relationship between priests and warriors appear to be salient.

- (a) Among the chief functions of the priestly elite relating to political power was conferring legitimacy upon *de facto* power wielders. By associating themselves and their considerable prestige with the secularly powerful and by creating or at least recognizing myths about the Kshatriya origins and hence the appropriateness of the warrior with power, the priests conferred *de jure* status.
- (b) It is highly probable that a large proportion of India's rulers, among them the illustrious, came from social groups of low ritual status and therefore the legitimating function of the priest was not a marginal function, but a central one, with respect to the stability of the Indian political system.

It is, of course, ironic that in early India, a civilization in which the ascribed ritual rank of a person or group was and continued to be more important in determining status than in any other society in the world, has probably been most often ruled by persons of the lowest ranks of ritual purity. In this sense, Hindu society has perhaps been relatively more free and open than we usually suppose at least until (again an irony) the establishment of British power which conferred special status upon the priestly elite as a literate and hence useful administrative class. The incidence of this legitimating process—in North and South India, in ancient times and during the medieval period—is very strongly supported by a variety of evidence. It is true that not all rulers of very low social origins disguised their origins by claiming kshatriya status, for we have inscriptions from South India in which local rulers refer to them-

selves as members of the fourth caste, Sudras.¹⁴ Many of such avowedly low caste, Sudra, rulers actually arose from lower orders of society, tribal or what we would now call untouchable groups, and Sudra rank for them was a significantly enhanced position. However, most upwardly mobile rulers claimed proper knightly or kshatriya rank, and when they do not, as in the case of avowed sudra warriors, one is tempted to join an epigraphist who wondered at why some South Indians, Reddy, warriors (Sudras) did not produce a fictional genealogy of high caste warriors.¹⁵ It is also true that not all claims to proper warrior rank were legitimated by priests since we have some evidence, again from South India, of established warriors of low origins conferring the title of "member of the Prince's family (*kumāravarkkam*) upon subordinate and dependent warriors.¹⁶

In general, however, legitimating and validating the social rank pretensions of Indian warriors involved the activities of the priest. The priest it was who could prepare a proper genealogy to be used on inscriptions or preserved in family records; it was also the priest who by officiating in marriages between newly emergent warrior families and older, established ones—an important ceremonial mark of arriving at a new, enhanced rank for the successful warrior of low origins—conferred sacral recognition of the warrior's claimed rank. In addition to the genealogical and marriage functions of priests, as these relate to legitimating a warrior's claim to

14. Several instances of this can be cited in inscriptions from medieval Andhra: Government of India, Archaeological Department, Southern Circle, *Annual Report on Epigraphy/A.R.E.*/1908, para 92, some Guntur chiefs identified themselves as of the "chaturtha-kula," 1128 A.D.; *A.R.E.*, 1915, para 59, 1377 A.D.; *A.R.E.*, 1917, No. 172, 1268 A.D.; Government of India, Archaeological Survey of India, *South Indian Inscriptions*, vol. VI, No. 103, 1145 A.D.

15. *A.R.E.*, 1900, para 56.

16. The following manuscripts prepared under the direction of Col. Colin Mackenzie and housed at the Oriental Manuscripts Library at the University of Madras may be cited; with each citation there is provided the page number in H. H. Wilson, *The Mackenzie Collection; A Descriptive Catalogue of the Oriental Manuscripts and other Articles* . . . 2nd ed. (Madras: 1382). "Account of Terumala Ponnappa Nayaka of Virupaksham Palayappattu in Coimbatore Country," Wilson, p. 420, VI-3; "Account of Debnik Poligar (Deva Nayaka) of Pollachi in Dharapuram District," Wilson, p. 418, IV-6; "Account of Savaroy Balagovindah Palligar (Subba Raya Valla Kondama Palle Nayak) of Mangalam in the Dharapuram District," Wilson, p. 418, IV-11; "Account of Nagaya Nayaka, Poligar of Periyapatti in Dharapuram," Wilson, p. 418, IV-11. Also see, *Tamil Lexicon* (Madras: University of Madras, 1936), p. 1005.

higher rank, we should also notice even more direct priestly means of legitimation. Hindu priests were ritual functionaries *par excellence* and one of the ritual ceremonies which was utilized to confer enhanced rank upon a successful warrior of low origins was the *hiranyagarbha* or Golden Womb ceremony. This ceremony has long been recognized as one of the great gifts to which Brahmans were entitled, and the ceremony is primarily a rebirth ritual for the sponsor who was usually a wealthy and powerful warrior.¹⁷ We discover in some South Indian and Deccan inscriptions reference to this rebirth ceremony in which an Indian warrior traces his descent from an ancestor thus "born".¹⁸ This pattern of legitimating activity is as evident among many Rajput and Chchatri families of Northern India as among the numerous "poligar" and Raja families of South India during medieval times.¹⁹

It is my contention that this political system which required the fictionalizing of warriors' social origins by priests of a locality in order to provide low status, powerful men with credentials to correspond with their actual power worked against the existence of what we would understand as good chronicles or histories of ruling families. Accurate history of many of the great ruling families of early India would have exposed the low origins of the founders of the families (as Chinese dynastic histories often do) thus embarrassing the descendants of the founders and priests who participated in their power.

The second condition or problem in early Indian society which, I believe, inhibited the writing and preservation of good chronicles or histories was the nature of the stewardship of Brahmans over Indian cultural traditions. This point may be viewed as a more

17. D. D. Kosambi, "The Basis of Ancient Indian History," *Journal of the American Oriental Society*, vol. 75, no. 1 (January 1955), p. 41.

18. The title was claimed by Rajaraja-Chola I according to K. A. Nilakanta Sastri, *The Cholas*. (Madras: University of Madras, 1955), p. 186; it is mentioned by D. C. Sircar in work on the Guhila Rajputs, *The Guhilas of Kiskindhā*. Calcutta: Sanskrit College, 1965; (Calcutta Sanskrit College Research Series, no. 34), p. 15.

19. See, for example, W. Crooke, *Natives of Northern India*. (London: 1907), pp. 88 ff.

generalized case of the significance of Brahman activities in the political system, but it requires separate discussion.

Of the various elements which have historically integrated the diversity of Indian society and culture, those associated with the Brahman priestly elite have been the most important. As stated by Professor Daniel Ingalls in a recent essay :

... there is a wide area where it is impossible to set a boundary between Brahman culture and the general culture of India.²⁰

The Brahman's sacred language, Sanskrit, was the only all-India language until the establishment of English ; everywhere there has been some form of Hinduism in which the Brahman was the paramount functionary ; everywhere there has been the caste structure in all of its differentiated forms, but in all forms the Brahman has been accorded the highest rank. In short, the Great Tradition of India is that which has been maintained and transmitted by the Brahman. He has been the steward of that tradition. It has become increasingly clear that the stewardship of the Brahman was sustained through their ability to assimilate and accommodate to the Great Tradition such elements of local or regional culture whose inclusion in the mainstream of honored and carefully transmitted culture contributed strength. Here it is of crucial importance to recognize that the Brahman did not exist as an agent apart from these local traditions and institutions, but was an integrated and prestigious member of local society. His role in the complex and continuous process of synthesizing local and universal cultural elements upon which the maintenance and transmission of Indian culture depended was a vital one. And what appeared to be sought by the Brahman maintainer and transmitter was a particular kind of dharmic society and culture. It matters not whether Brahmans were motivated by selfish, power-maximizing ends or by the pursuit of the best society and culture consistent with the quest for salvation. It must have mattered considerably to the Brahman, however, that

20. "The Brahman Tradition," in Milton Singer (ed.), *Traditional India : Structure and Change*, special number of the *Journal of American Folklore*, vol. 71, (July, 1958), p. 209.

this synthetic process be not revealed through an examination of its workings, its principles, and its goals.

I suggest, therefore, that most areas of human conduct and behavior extending over what we would call social history, very broadly conceived, would not be voluntarily subjected to the public examination of history by Brahmans. Where we are permitted glimpses of this synthetic process in operation, as in the wealth of stone and metal inscriptions, we are offered evidence which is so scattered in time and space as to make a developmental pattern very difficult to establish. The early Indian social arbiter, usually a Brahman, did not conveniently organize and codify these discrete particles of evidence within the framework of his own time and place. Rather, social regulations were expressed as extremely general rules, as in most *smṛiti*, the aggregative effect of which was to reinforce a body of values for an ideal society, not to adjudicate conflicts in a real social system.

Nor was there ever a significant enough challenge to the Brahmans' function as social arbiters or cultural custodians to force an examination of the development of Indian society and culture by way of self-justification until very recent times. Earlier, I suggested that there appears to have been little essential difference between the Brahman priestly elite and the Jain and Buddhist monks who at various times and places in early India achieved something like the same degree of social and religious power. The same thing may certainly be said for the political roles of these heterodox leaders. Essentially, they strove for and often achieved the same degree of functional integration within the local social and political systems where they resided as did the Brahman. They too came to terms with Indian society and culture as a price of maintaining prestigious social positions. The intrusion of Muslim power into India threatened the maintenance of Hindu society and the status of both Hindu warriors and priests, as well as other groups, yet this challenge served more to bolster existing traditional arrangements than to weaken them. The challenge of European civilization through the political control of British power and the attraction of many Indian intellectuals to European values was the first successful attack upon the remarkably effective Brahman stewardship. Beginning with people like Raja Ram Mohan Roy there was an examination of the

development and nature of some aspects of Hindu society and the emergence of a quality of social criticism and analysis which, though imperfectly, permits us to better understand eighteenth century India if not the preceding centuries.

The third condition in early Indian Society which I believe militated against the writing and preservation of good chronicle or historical works has to do with the way in which tradition was transmitted to successive generations of Indians. To speak of the transmission of tradition is, in a sense, a solecism, I am aware. Yet very few historians have used the concept of tradition with much reflection. This is surprising, it seems to me, for the tool bag of the historian is, generally speaking, never overcrowded with conceptual tools, and the concept of tradition, with its central focus on time, is a concept which should be rescued from the folklorist and at least clarified, if not utilized, by historians. Among historians who used the concept of tradition was Professor Frederick Teggart. Teggart emphasized the fact that tradition, properly conceived, is an activity, a social process, the primary objective of which is to assure that valued ideas and techniques of a society are transmitted through time.²¹

Every society establishes the means by which valued ideas and ways of doing things are transmitted to successive generations. And, while it is true that such transmission is continuous and involves all social groups from the low to the high, it is well recognized that one of the significant elements in the character of Indian civilization of earlier times was the special place of the priestly elite in the transmission process. It was with and through these leaders of local and regional society and culture that the most valued elements of the culture were transmitted to successive generations. In this connection, it seems appropriate to suggest that the *itihāsa-purāṇa* class of Sanskrit literature, mentioned above as the largest single class of Sanskrit literature and also the class of literature to which the greatest historical importance has been attached, occupied a relatively low order of appreciation until a late date

21. Frederick J. Teggart, *The Theory and Process of History*. (Berkeley: University of California Press, 1941), pp. 190-91.

in ancient Indian history. One reflection of this was the traditional attribution of authorship of these works to groups such as *Sūtas* and *Māgadhas*, men of somewhat debased caste, the offspring of an illicit union between a Brahman mother and a warrior father.²² Such persons would have tainted these works in the minds of the orthodox and the followers of orthodoxy. By the eighth century, when the puranas had become an important source of orthodox values, these lower caste men had ceased to be associated with these texts. My point here is that to the extent that the *itihāsa-purāṇa* works may be identified as an element of tradition which was passed over many generations, it did not rank with other classes of knowledge, and one indication of its differentially lower status was that the *purāṇas* were the work of lower caste men, not Brahmins.

In fact, early India provides an almost unique example of what I would call *controlled transmission* of tradition. There are two reasons for this assertion. First, the most valued knowledge of early India was passed from person to person orally. The transmission nexus was, in the main, confined to the relationship between a learned man, *guru*, and such students as he would carefully select not only to learn from him but to reside with him as would a son. Second, therefore, access to important knowledge rigorously excluded any but those who by the ritual purity of their birth group (*jāti*) were regarded as eligible. Under these circumstances of controlled transmission, it was possible for the Brahman to discourage the exploration of certain fields of knowledge and, if discouragement did not suffice, they could elect not to transmit such knowledge whether of Brahmins or others. History, for the reasons I have suggested above, may have been one such field of knowledge.

The transmission of valued knowledge is the life blood of a living civilization, and, every civilization develops ways of filtering out certain elements of knowledge which may be seen as injurious

22. These are listed among the pratiloma castes in *Yajñavalkya Smṛiti with the Commentary of Vijnaneśvara called the mitaksara and Notes from the Gloss of Bālabhāṭṭa*. Translated by S. C. Vidyarnava. (*Sacred Books of the Hindus*, vol. 21, Allahabad, 1918), pp. 196-97.

to the civilization by its leaders. This screening process may explain the fate of historical ballads and chronicles which some scholars (e.g., Vincent Smith,²³) and statesmen (e.g., Surendranath Banerji) believe were produced but failed to survive. In our era of mass printing and publishing, it is difficult to imagine the successful control, through repression, of the traditions of a people. Yet all of us are aware of relatively impressive programs of this sort in Hitler's Germany and Stalin's Russia. And even in modern democratic India with its essentially benign government, there was an order issued by the Madras Director of Public Instruction a few years ago that syllabi and text books in Indian history should avoid material which may lead to social or communal conflict. Here, then, is a kind of "culture-losing" which may exist in every civilization at all times, but conspicuously, I am arguing, did it exist in early India with its highly controlled transmission.

I have argued here that early India failed to produce and/or to preserve a chronicle or historical tradition of even modest quality despite the richness and scope of its early intellectual development for three reasons :

- (1) A political system based upon the surreptitious fictionalizing of the social rank of its low caste warrior leaders by the priestly elite;
- (2) That this same priestly elite was constantly involved in an even more comprehensive and still covert synthesis of important local, regional, and all-India values, customs, and ways of doing things;
- (3) And that through their control over the processes of transmission, scrutiny of these disguised efforts were not passed to successive generations, if, indeed, they were ever undertaken in an appreciable number.

This argument is offered tentatively and the evidence which I have given in support is certainly modest. Moreover, I have offered a conspiracy hypothesis which requires even more formidable evidence than is usually the case with historical explanations. I do not

have such evidence, nor do I intend to search for it, for it is not in the area of my essential research interests. But, as an historian of India, I am bound to be intrigued by the question of early India's deficient historiographical tradition, and as a reasonable person I am bound to be somewhat offended by the nature of explanations which have been offered to this time. I find such explanations as the excessively spiritual nature of the Indian mind or the accidental loss of historical works unacceptable, and these explanations are supported by evidence no better than my admittedly poor evidence. Moreover, these other explanations cannot be proven whereas my suggestion of conspiracy, that is the deliberate discouragement of good chronicle or history writing and its repression through failure of transmission, may be supported or controverted by the existing literature.

Finally, I am very much aware that many of the propositions I have advanced are subject to challenge. This does not dismay me, for I think that they may be propositions worthy of serious and scholarly attention not so much for what we might learn about why there was no important historical work in early India, but for what we might learn about the organization and functioning of early Indian society and culture.

23. *The Oxford History of India*. (Oxford : Clarendon Press, 1961), pp. 14-15.

The Portuguese Factory and Trade in Pepper in Malabar during the 16th Century

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A new phenomenon—the Portuguese factory—appeared on the Arabian sea coast at the beginning of the 16th century. Trade conducted by the factory was the chief medium of European influence on the economic life of the regions under the Portuguese colonial control. The Portuguese factories, like the Portuguese trade in Asia, were different in nature from other factories established in that time in territories colonized by Europeans. The aim of this paper is only to explore one field of their activity—the trade in pepper—and to identify the specific character of the factories in Malabar and their role in the 16th century trade in Asia.

The 16th century was marked in Malabar by a rapid development of the cultivation of pepper. This was connected with the growing demand for pepper in India, China, Persia and the countries ruled by the Ottoman Empire. According to reliable estimates the production of pepper increased between about 1515 and 1607 by 200 to 275 per cent¹. In all probability this increase started before 1515, the date mentioned by Pires and Barbosa, and probably before the

1. The assessment is based on the figures of Pires, *The Suma Orientale*, HS IIs nos 89-90. London 1944, esp. p. 362; *The Book of Duarte Barbosa*, HS IIs, nos 44, 49, London 1918, 1921; *Relazione delle Indie Orientali di V. Quirini* (1506) apud Alberi, *Relazione degli ambasciatori veneriani al senato* . . . vol. XV, p. 10; *Relazione di Leonardo da Ca Masser alla serenissima Republica di Venezia sopra il commercio dei Portoghesi nel India dopo la scoperta del Capo di Buona Speranza 1499-1506* *Archivio Storico Italiano* App. II, Firenze 1845, p. 32; D. Pacheco Pereira, *Esmeraldo do Situ Orbis* HS IIs, no 79, London 1937, p. 168; a letter of Andrea Corsali to Lorenzo Medici, Cochin 17 IX 1517, apud Ramusio G. B., *Navigazione e viaggi*, Venezia 1563, vol. 1, 188vo and many other sources as well as letters published in *Cartas do Affonso de Albuquerque segundas de documentos que as elucidam. Collecção de Monumentos ineditos para a historia das conquistas dos Portugueses em Africa, Asia, America*, I serie, ed. R. A. de Bulhao Pato, Lisboa 1884-1935, vol. I, p. 133, 409, III p. 258, VII p. 175-76. For early 17th century there is a memoir of F. da Costa in *Documentação Ultramarina Portuguesa*, vol. III, p. 351 cf. J. G. da Silva, *Alguns elementos para a historia do Comercio da India de Portugal existentes na Biblioteca Nacional de Madrid*, Lisboa 1951, p. 42. V. M. Godinho came to a diffe-

Portuguese came there. But the question arises as to how did the Portuguese presence in Cochin, Cannanore, Quilon and other parts of Malabar help to increase the cultivation and export of pepper. There is also the problem as to how the consumption of pepper in Europe induced an increase in production. Research on the transport of pepper to Europe, both on the Levantine route and on board ships of the *Carreira da India*, shows that these quantities fluctuated in the course of the 16th century. Fluctuations are noted from year to year as well as over longer periods of time. The table below is illustrative of the situation with regard to the export both to Lisbon and via the Levant.

TABLE I²
THE EXPORT OF PEPPER TO LISBON AND THE LEVANT
(in millions of kg)

Years	To Lisbon	Through the Levant	Total
1501-03	0.4	1.1	1.5
1504-09	1.2	1.0	2.2
1510-13	0.8	0.7	1.5
1514-22	1.6	0.9	2.5
1523-36	0.78	1.0	1.8
1537-49	1.3	1.1	2.4
1550-56	1.0	1.0	2.0
1557-71	1.2	1.4	2.6
1572-85	1.0	1.0	2.0
1586-90	0.9	1.0	1.9
1591-1600	0.7(*)	1.4	2.1(*)

(*) Data include ships which did not reach Lisbon.

rent conclusion in *L' Economie de l' Empire Portugaise aux XVe et XVIe siècle L' or et le poivre, route de Guinée et route du Cap*. Paris, 1958, (Unpublished), pp. 740, 748, 753. He ascertained the increase within bounds of 260% to 330%. These figures are due, in my opinion, to the underestimation of the range of pepper production at the beginning of the 16th century. I have discussed the problem at length in the first chapter of my book, "The Pepper Trade in the Indian Ocean and Portuguese expansion in the 16th Century" (in Polish), Warsaw.

2. The table comes from Chapter II of the work quoted above in which I analyse data concerning the export of pepper to Europe. The data on the ten year periods show a considerable uniformity of supplies to the European market, which contrasts

Calculations show that the Portuguese shipped to Lisbon, around 1515, more than 30 per cent of the Malabar production. By the end of the century however the shipments accounted for only 3 to 4 per cent. It is worth stressing that pepper was supplied to Europe through the Levant not only from Malabar. Taking even this into consideration it must be stated that the share of Europe in the consumption of pepper produced in Asia decreased. The question is whether the role of the Portuguese factories in the export trade of Malabar also decreased.

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One of the main aims of Portugal was to seize control over Malabar's trade in pepper, and this task conditioned the policy of the first years of expansion. The growing export of pepper to Asian countries in the beginning of the century, and a general activization of exchange in the Indian Ocean created opportunities for getting rich for all those who managed to control shipping. The control over Asian trade which the *Estado da India* intended to seize was not only to be a source of income. This control was to assure advantageous conditions for the factories of the *Estado da India*, representing at least formally the interests of the king. This was especially important in the purchases of pepper to be shipped to Lisbon, in view of the fierce competition and an evident gap between supply and demand. It was the interest of the king to

with big fluctuations of export from Asia to be seen in Table I (the differentiation of exporting centres is impossible). This can be presented in the following manner:

TABLE II

Period	Import to Europe mln kg.	Period	Import to Europe mln kg.
1501-10	1.95	1551-60	2.2
1511-20	1.9—2.4	1561-70	2.4
1521-30	1.75	1571-80	2.0
1531-40	2.0	1581-90	2.0
1541-50	2.0	1591-1600	1.9

obtain cheap purchases of pepper on convenient terms for the Casa da India and at the same time to maintain a high level of prices in Europe³. The profit could be entirely used for the needs of the sovereign, which was not always possible in the case of other sources of income from Asia. Thus, not only the material circumstances but also the policy of the Casa da India contributed to a relative shortage of purchasing power at the disposal of the factories. Though in Malabar the factories appeared to transact business on advantageous terms, the reality was somewhat different. From the very beginning a wide use of military force was envisaged.⁴ It would seem that the Portuguese used force entirely or mainly to gain a position of advantage in the trade of the Indian Ocean. This was achieved by occupying Goa, Malacca and Ormuz, and not by the actions of the corsairs. From the point of view of the Malabar factories this commercial domination had only one advantage: it helped secure the money needed for the purchase of pepper. The factory also needed force to assure supplies of pepper in required quantities. Thus, the participation in Asian trade was only a secondary factor. This means that the need for a wider trade arose from the needs of the factory, from the character of its activity.

The use of force for the needs of the factories in Malabar could be applied in two directions. Military superiority could be extended on land or on sea⁵. The idea of political domination in Malabar was abandoned in a few years, as the undertaking proved too much for the resources of Portugal. There were also different ideas on

3. See J. G. da Silva, "L' appel aux capitaux étrangers et le processus de la formation du capital marchand au Portugal du XIVe au XVIIe siècle" in: *Les Aspects internationaux de la découverte océanique aux XVe et XVIe siècles. Actes du Ve colloque Internationale d'Histoire Maritime*, Paris 1966, p. 359, 361. J. Kieniewicz, "Droga morska do Indii i handel korzenny w latach 1498-1522" ("Sea Route to India and the Spice Trade in 1498-1522"), *Przegląd Historyczny* LV, 4, Warsaw 1964, pp. 591-2, 599-2, 599-600. Cf. F. Edler de Roover, "The Market for Spices in Antwerp 1538-1544," *RBPBH* XVII, 1938, passim. *Cartas* II, pp. 301, 317 *Barros, Asia*, I/VI/4.

4. Cf. *Sanudo opinions I Diarii*, IV p. 200 and a letter of Albuquerque to D. Manuel April 1, 1512 in *Cartas* I, p. 40-41.

5. Albuquerque represented the first point of view, the other one was formulated in 1508 by Francisco de Almeida, cf. G. Correa, *Lendas da India, Collecção de Monumentos*, op. cit., Lisboa, 1862-1923, I, pp. 906-7. Cf. also D. Fernandes's opinion on this subject in a letter dated December 25, 1506, *Cartas* III, p. 211.

the form of domination on the sea. The factory at Cochin and the people connected with it were afraid of establishing a strong colony in Malabar, but they did not want the centre of government to be moved to the north to Goa. Thus, they tried to prove that the superiority of the fleet would assure the factory satisfactory conditions of existence. Albuquerque mapping out the material bases of the activities of the Estado da India also took into consideration the possibilities of the factories' purchases. His opponents, however, laying stress on the development of the fleet, in practice abandoned the possibilities of implementing the tasks, which were mapped out by the policy of the Casa da India. This conflict was not only based on a struggle for power. There was a genuine colonial problem—whether the factory would in the future forward the economic purposes of the Estado da India, directed by Lisbon and Goa, or whether the Estado would be subordinated to the interests of the factory. Though the centre of the Estado was moved to Goa, the opponents of Albuquerque won. In this way the Estado da India became superior though it had been created to act as an organ to facilitate the activity of the factory. The victory of Albuquerque's opponents was expressed in the changed objectives of the Estado's policy and the eventual consensus between the mutually antagonistic groups⁶.

Portugal's failure in her struggle with Calicut had a decisive influence on such an outcome of events. The existence of another centre, hostile to and independent of the Portuguese authority, was an advantage for merchants coming for pepper and made really impossible any monopoly by the factory over the export and purchase of pepper. As long as Calicut was independent, Portugal could not fully control the hinterland of Malabar and the roads which led to areas where pepper was cultivated. Of great importance was the fact that the competition with the Zamorin (Samudri Raja) and the fleets of the Kunjali (Kunhi Ali) consolidated contacts between the factory and the raja of Cochin. The alliance was in the interest of both sides, but the way it developed was not advantageous to the Casa da India. The Portuguese actually domi-

6. *Documentação para a historia das missoes do padroado Portugues do Oriente*, ed. A. da Silva Rego, Lisboa 1947, vol. I, p. 404.

nated the policy of the raja, but in time the interests of the factory proved quite coincident with the economic and political interest of its ally. A first sign of cooperation and rapprochement was a negative attitude towards the establishment of the territorial bases of the Estado da India in Malabar and to the new policy towards Calicut initiated by Albuquerque. This policy was disadvantageous for those connected with the factory at Cochin, as it limited their independent moves and the possibilities of additional profits. The raja considered it a threat to independent political existence⁷.

Hostility between the Portuguese and the Zamorin was advantageous for the raja of Cochin, as it increased traffic in the port. Cochin before the Portuguese expansion was a secondary centre. With their arrival emerged a chance to disorganize the trade of Calicut, and direct to Cochin at least some of the ships. The Portuguese did not introduce in Cochin any additional charges or customs. This was left to the raja, as were the duties charged for pepper brought to be weighed from inland areas. This could undoubtedly contribute to a rapprochement between the raja and the factory, on condition however that the activity of the Portuguese aimed against the Zamorin would enliven Cochin. This move proved very advantageous for the private trade of the Portuguese; it however deprived the king of profits from such an important port. Ships calling at Cochin avoided the severe control exercised at Goa and also the high customs charged there⁸. This fact established a strong link between the Portuguese from the factory and the raja. Another factor contributing to even closer ties was illegal export of pepper—illegal from the points of view of Lisbon as well as the Estado da India.

The factory at Cochin had to cope throughout the entire 16th century with difficulties in purchasing pepper. This was partly because the increase in the production of pepper in response to the rapidly growing demand was rather slow and partly a result of fluctuations of the harvest. The main reason was however a constant shortage of purchasing power which caused difficulties in estab-

7. *Cartas*, III, pp. 39-40.

8. "Tombo de Estado da India," *Subsidios para a historia da India Portuguesa*, p. 17.

lishing trade contacts between the Portuguese and the local suppliers. Moreover, the Portuguese could not even offer any attractive goods (such as luxury fabrics) which were sought after in Malabar⁹. During the first years, before a clear pattern of the factory's participation in Asian trade was established, military force was used to make up for this weakness. It is characteristic that though the main obstacles in reaching the producers of pepper were merchants from Calicut (Mapilla and Pardeshis) the repressions were aimed mainly against the rulers. The Portuguese wanted to force the rulers to grant them a privileged position in trade¹⁰. This method failed in Calicut, but it does not mean that it failed altogether. On the contrary, it must be stated that this method served to compensate for the numerous inconveniences of those taking part in the expansion. In Cochin the Portuguese expected to make the factory a pepper delivery centre and established a monopoly with the aid of a dependent ruler. Cochin was certainly a good base for such undertakings; the idea failed however due to an inefficacious blockade. Furthermore, the Portuguese very soon found that the local rulers controlled neither the areas where pepper was cultivated nor the main inland routes. The elimination of the previous customers did not assure the newcomers advantageous terms of purchase. Thus the efforts of the factory in Cochin were directed already from the first decade to gain control over rulers of inland territories. Its plans concerning the imposition of a control over the producers of pepper were never carried out. More attention was paid to ideas concerning terrorist activities against rulers controlling the transport of pepper down the rivers. In the years after Albuquerque's death this was replaced by attempts to win the favour of allies and grant subsidies. The Portuguese also supported the expansion of the raja of Cochin in this direction. A major problem was to secure some form of control over the territories of Tekkum-

9. Barros, *Asia* I/IV/8; Ramusio, I, p. 120. With the passing of time, especially in the second half of the 16th century when the European price of silver went down, the export of cash from Lisbon increased. However, this accounted for only a small increase in the quantity of pepper purchase in the factories.

10. Ch. Rohr, *Neue Quellen zur Zweite Indienfahrt Vasco da Gamas*, Leipzig, 1939, pp. 18, 20. Cf. *Alguns Documentos do Tore do Tombo*, pp. 99-105; Barros, *Da Asia* I/IV/10.

kur, Vadakumkur, Indappalli and Mangate¹¹ as the Portuguese were specially anxious to keep the rulers of Calicut from controlling those territories.

The involvement of the Estado da India in control over shipping, and the impossibility of concluding the competition with the Zamorin by using military force made it difficult to concentrate all the deliveries of pepper from inland districts at the Cochin factory. This was very advantageous for the raja of Cochin who, exploiting his merchants, also took advantage of the difficulties of the Portuguese to influence other rulers of Malabar. Of importance for the factory in Malabar in the 16th century was the fact that the raja managed quite quickly to gain the position of a necessary intermediary between the merchants and the factory at Cochin as also between the suppliers of pepper and rulers of the inland territories. The force of the Estado da India assured the factory the cooperation of the raja and the merchants but was not big enough to guarantee a full control. Thus, in course of time, among the duties of the raja of Cochin was the safeguarding of riverboats—the fleet bringing pepper to be weighed at Cochin and the payment of subsidies to rulers and magnates of neighbouring territories¹². This was for the raja of Cochin an additional reason for opposing any possibilities of rapprochement between the Portuguese and the Zamorin. Any agreement or even a peace treaty would enable the Portuguese to undertake more decisive steps to assume control over the routes of pepper deliveries. Plans connected with territorial penetration were of small importance for those handling the business of the factory, owing to their participation in the illegal export of pepper to the Red Sea ports. Their interest however grew when for some reasons the supplies of pepper to the coast were reduced

11. *Cartas*, I, p. 329; II, p. 258.

12. The charges appeared when the attempt was given up to control the interior of Malabar. These charges were meant to induce the ruler to facilitate and encourage the export of pepper to Cochin; the export bore, however, no proportion to the actual supply in Cochin: Botelho, *Tombo do Estado da India*, pp. 25-26; *Documentação Ultramarina Portuguesa* II, p. 145, III, pp. 310, 312. Cf. Panikkar, *Malabar and the Portuguese*, Bombay, 1929, p. 167. This procedure was not effective. Besides the rulers of Mangatti and Vadakkumkur, the rajas of Porakkad, Diampar, Nambiyadiri of Parur, Karutta Tavali, Tekkumkutti of Canbarapelin and Tekkumkur (Teque Cute) were also paid. As the import from Paliacare was considerably large its rulers received the bonus of 1 *fanam* for every *bahar* catered by merchants. *Documentação Ultramarina Portuguesa* III, p. 333.

due to an increased export by land through the Ghat in the direction of Madura and Coimbatore. It is doubtless that the increasing freedom of activities and influence of the raja of Cochin in Malabar, as also his later territorial expansion, were not in the interest of the Estado da India and the policy of Lisbon. These developments were however made possible by the activities of the factory and people connected with it¹³.

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The first and main task of the factory at Cochin was to gain allies to supply the Portuguese fleet with pepper. For many reasons the raja of Cochin was a suitable partner for the Portuguese. He was not strong enough to resist their demands and, threatened by the expansion of the Zamorin's power, inclined to accept the infringement of his sovereignty. The raja though aware of the risks involved in his policy, had no choice. The only thing was to take advantage of the weak points of his new allies. The successive rulers tried to make use of the growing tendencies within the factory to omit the regulations and restrictions issued by the Casa da India¹⁴. Unni Rama Varma and Unni Rama both followed this policy, though not in quite the same way.¹⁵ In 1505 the Portuguese managed to break the opposition of Cochin, but as a result of internal struggle, such people as A. Real, G. Pereira and L. Moreno influenced the government and activities of the factory, the form of which in later years changed only slightly. The loyalty of the raja to the factory, and the coincidence of their interests defended him well against the actual danger of subordinating his country to the interests of the Estado central authorities.

The factory was often ready for concessions to the raja mainly owing to shortage of the funds for the purchase of pepper. The raja and his officials helped organise the purchases and facilitated the contacts with the suppliers. The latter however had enough

13. *Ibid.*, pp. 313-15.

14. D. Peres, *Regimento das Casas das Indias e Mina*, Coimbra 1947 and many others published in *Cartas*, *passim*.

15. Panikkar, *op. cit.*, pp. 65, 112.

influence and money to maintain their independence and demand a reasonable price. Thus the raja was not only an intermediary and organizer but also granted credit to the factory. He was also a guarantor of loans granted to the factory by private persons¹⁶.

The next task of the factory was to assure means for the purchase of pepper delivered at Cochin. Money was sent from Lisbon always in too small quantities, especially in the first decades, when the price of metal in Europe was still considerably high. Casa da India thus recommended the factories to buy pepper for goods, or at least with a big share of European goods.¹⁷ This however failed in Malabar, especially when the Portuguese established contacts with producers who arrived at Cochin. They always insisted upon payment in specified amounts of cash, and had no interest in European goods. Even if they were paid partly in copper they tried to get rid of it at once, by offering it to merchants for a lower price than the one which had been fixed by the factory.¹⁸

Another reason for the factory to seek ready means of payment in Asian trade was the rapidly increasing costs of maintaining the Estado da India.¹⁹ They exhausted increasingly greater portions of the resources sent from Europe and also of the profits from the activity in Asia. Such a state was the result of the economic weakness of the Portuguese expansion, of its feudal character. A lack of means made it impossible for Portugal to compete with the Asian merchants. The weaker the position of the Portuguese, the stronger had to be the force they used. The above mentioned reasons made a constant use of military force in Malabar a necessity. The same could be said about the control of shipping in the Arabian Sea. The indispensable support that the Estado da India had to provide for the factory tended to increase, and in my opinion the results were not proportionate to the effort. This was connected with the resistance of Calicut and the merchants interested in a free export of pepper. The increase was however most closely connected with

16. *Cartas*, III, p. 258; *Documentação Ultramarina Portuguesa* III, pp. 319-21, 337-8 of *Cartas* III, p. 397.

17. *Cartas* III, pp. 202, 395; VI, p. 409; VII, p. 175; Godinho, *op. cit.*, p. 805.

18. *Cartas* I, p. 325.

19. *Cartas do Simão Botelho, Subsídios . . . op. cit.*, p. 13; *Cartas* III, pp. 381-2. Cf. Boxer, "The Portuguese in the East 1500-1800" in *Portugal and Brazil. An Introduction*, ed. H. V. Livermore, Oxford, 1953, pp. 143-5.

the character of the Estado da India itself. Though often contrasted with each other, both the factory and the Estado da India were products of the same community and served the same aims. A real aim of expansion was to assure income and employment for certain groups of the Portuguese community, in Cochin, Goa and Lisbon. The Portuguese kings differed in their views from those who were entrusted with responsible and very profitable posts in managing the Asian enterprise.²⁰ A still different view was held by those who made money on the existence of the Estado da India but were not willing to pay. Quite different was the opinion of those numerous participants in the expansion who, according to the opinion of the authorities, were not to have a share in the profits. They rarely made big fortunes, but nevertheless concentrated their interest on their own fortunes, without any consideration for the interest of the far away metropolis. Thus sums coming from various sources to the Estado da India were not sufficient to cover the cost of the purchase of pepper, though the factory was expected not only to supply the fleet returning to Lisbon with pepper, and the officials there with a living, but also to hand over money to the treasury of the viceroy at Goa. In this situation the aims of the factory and the private interest of the participants in the expansion made the factory not only participants in the Asian trade but also give up the original aim of total control of the purchase and distribution of pepper. This created the necessity of cooperation with the raja of Cochin and dependence on Asian merchants.

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The Portuguese, with their military strength brutally forcing their way into the Asian trade, were never welcome customers for Malabar pepper. However, for the merchants who procured pepper from the producers both in the inland and the coastal districts, the newcomers, though not rich, could increase the demand. This enlivening of trade was only illusory as no new markets were gained after the arrival of the Portuguese. From the point of view of the traditional exporters this was not advantageous, as the arrival of a

20. *Cartas* I, p. 278.

new competitor for the existing pool of pepper export could only increase the procurement prices. This situation was welcomed by the producers but certainly was not intended by the Portuguese. The presence of the Portuguese did not have a special influence on the increase of the production of pepper, and they had to use force to get their share in the export.²¹ Competition in the European market did not influence to a big extent the relations between the factory and the merchants. In my opinion the struggle of the Portuguese with Arab merchants did not really concern deliveries to Europe. The Portuguese arrived in Malabar in a period of growing demand for pepper in Asia and the European market was already much less attractive than it used to be. The export to Lisbon limited to a certain extent the possibilities of delivery to the attractive markets of China, India and Persia. It did not however have a direct influence on the supply to Alexandria and the ports of Syria. The Portuguese export of pepper to Lisbon caused difficulties in supplies to all other outlets. Supplies to the Levant were considerably limited, not because of the Portuguese exports to Europe, but due to the fact that the countries of the Near and Middle East used for their own needs, most of the deliveries brought to the region of the Red Sea and Persian Gulf. This long lasting situation indicates a constantly increasing demand in Asia, which was also a cause of the lasting difficulties of the factory. Throughout the entire 16th century the quota of deliveries to Lisbon was constantly reduced when the crop was smaller or other purchasers had a bigger influence. This increase of demand for pepper in Asia, though disadvantageous for Portuguese interests, assured Lisbon a market for the product. If we accept the opinion that the arrival of the Portuguese had a decisive influence on the development of the cultivation of pepper in the earlier or later period, the causes of the reduction of the Levantine export should then be considered.²² In such a case the development of production would enable a considerably quick compensation of losses suffered by the traditional routes of

21. A letter of Petro Strozzi, December 20, 1510, *Cartas* VI, p. 409.

22. Yet it was not so disastrous as it is frequently made out to be. The complaints of Priuli and Sanud's Chronicles are not confirmed by the correspondence of the merchants. The loss suffered by Venice was compensated mostly by the trade with Ragusa, Ancona, Marseilles, Barcelona and other cities.

export to Europe. As a result of this, one should expect fierce competition, fall in prices, or a considerable increase in the consumption of pepper in Europe.²³ Also, in Malabar the competition between the Portuguese and other exporters would have adopted a completely different form. There are no indications, however, of such developments. On the contrary, everything seems to prove that the Portuguese export of pepper to Lisbon was in such quantities mainly owing to a considerable increase in production.

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The pepper was supplied to be weighed at Cochin both by the producers themselves and merchants²⁴. Among the producers were those who either came individually or implemented contracts concluded with merchants granting advances. It is difficult however to state anything about the proportion of the two groups in the 16th century. In my opinion the increase in demand for pepper did not facilitate control of merchant capital over production. This developed in Malabar only in the next century, a period as it seems not favourable for the growing of pepper. Still, at the end of the 18th century the group of independent tenants in north

23. There was no such fall in prices on the question of consumption see R. Fascon, "Un siècle du commerce des épices à Lyon. Fin XVe-fin XVIe, s.," AESC XV, 1960; Godinho V. M., "Le repli venetien et égyptien et la route du Cap 1496-1533, L'Éventail de l'histoire vivante". *Hommage à L. Febvre*, vol. III, Paris 1954; Horst W. A., "Antwerpen als specerijenmarkt" *Tijdschrift voor Geschiedenis*, II, 1936; Luzzatto, G., "La decadenza di Venezia dopo la scoperta geografica nella tradizione e nelle realtà." *Archivio Veneto*, Ve Serie, v. 54-5, Venezia, 1954; Romano R., Tenenti, A., Tucci, U., "Venise et la route du Cap 1499-1517", (copie doctylo); F. Edler de Roover, "The market for spices in Antwerp 1538-44", RBPhH XVII, 1938; Sardella, R., "Nouvelles et speculation à Venise au début de XVIe, s". *Cahiers de Annales* no. 1; J. Gentil da Silva, *A abertura de uma rota para o Oriente pelo Cabo da Boa Esperança não arruinou Veneza*, Lisboa, 1950 and *Les Découvertes Portugaises: raisons particulières et problèmes généraux*, Actas IV, Lisboa 1961: esp. pp. 488-9; Kieniewicz *op. cit.*

24. Merchants buying pepper passed from one garden to another to secure their supplies when the harvest came, *Cartas*, I, p. 330; Barros, *Da Asia* I/V/5, p. 198. Some of them were Muslim (Moplah), but there were also some Syrian Christians and Biabares (Vyabari Nayars)—Hindu merchants living at the foot of mountains. *The Book of D. Barbosa* II, pp. 3344, 56, 71; Brit. Museum, MSS Add 28461, pp. 57 v, 59 v; Schurhammer G., *Franz Xaver* II, 1, p. 427; Barros, *Da Asia*, I/VI/4.

Malabar was quite numerous²⁵. These independent, as a rule small scale, producers could give the Portuguese a chance to establish contacts with the hinterland, by-passing the merchants. But this did not work out. Probably the high prices demanded by those suppliers were not the only cause of the failure²⁶. They were mainly independent producers, most of them it seems were of the Mapilla and Syrian Christian communities. The factory had lively contacts with them, especially till the 1520's²⁷. These contacts were reduced when the producers consolidated their position. This contributed not only to fierce competition between the customers for pepper on the coast, but also to the constantly increasing export of pepper to Vijayanagar, Bijapur, Golconda, the territories of the Mughal empire. There was a land route not only to Bengal but also to the much farther regions of "great and lower Tartaria"²⁸. In such a state of affairs, the acceptance of merchants as middlemen by the factory was unavoidable. This was impossible without the influence of the rulers available only if certain concessions were granted by the Portuguese to the raja who had to act as a mediator. However, a situation which fitted in with the aspirations of the rulers did not seem to be in the interest of the merchants and the factory²⁹. At Cochin the process of taking over the tasks connected with the organization of the transport of pepper for Lisbon by the raja made very slow progress.

25. Buchanan F., *A Journey from Madras through the Countries of Mysore, Canara and Malabar*, London 1807, v, II, p. 455, 467, 523. Alaev is of a different opinion, *Southern India, The Social and Economic History of XIVth-XVIIIth c.* (in Russian), Moscow 1964, p. 293. Barbosa's information (*op. cit.* II, p. 56) concerns most clearly the connections of the merchants with rich land owners and not with the farmers, who could be made dependent by advances.

26. *Cartas* III, p. 381 of I., pp. 126, 200 and VII, pp. 175-6.

27. *Ibidem* I, p. 133, II, p. 394.

28. Grunaeus, S., *Novus orbis regionum ac insularum*, Basileae 1555, p. 207; Barbosa, *O Livro* p. 302; Sasseti F., *Lettere edite e inedite* . . . , Firenze 1855, p. 423; Pelsart apud Thevenet H., *Relations de divers voyages curieux*, . . . , Paris 1696, v. I, p. 12; Moreland, *India at the death of Akbar*, London 1920, pp. 219-20; *Cartas* VII, p. 175; *Documentação Ultramarina Portuguesa* III, pp. 315, 350. The export was organised similarly to that by sea, i.e., by the system of advances. Francisco da Costa wrote: "Esta pimenta se leva pera o sertao, e vem nestas meses quo digo boidas a leva la trazendo a troco aquelas cousa que na terra nao ha, como panos de vestir e arroz", *Documentação Ultramarina Portuguesa* III, p. 350.

29. Barros, *Da Asia*, I/V/9; I/VII/3; Biker J., *Collecção de tratados e concertos de pazes que o Estado da India Portuguesa fez* . . . , Lisboa 1881, v. I, p. 91; *Cartas* II, pp. 200-3; I, p. 85; Ramusio C. B., *op. cit.*, I, p. 137 v.

Merchants from Malabar, at least those within the influence of the factory, could not avoid selling pepper to the Portuguese. At Cochin there were generally a few agents supplying pepper for the factory. Among them were, as a rule, the Mapilla and later also Syrian Christians and the Khoja.³⁰ In exchange they generally got several trade facilities. Among those cooperating with the factory were also new Christians, who were however, as a rule, retail merchants. These merchants dealt with advances to the producers, and the shipment of pepper to Cochin. They also organized the purchase of pepper already brought to be weighed at Cochin.³¹ The delivery of pepper at Cochin was no doubt a facility for the Portuguese, though it did not save them from problems connected with its purchase. Due to the troubles in the factory large quantities of pepper were stored by merchants and the raja, especially the latter, thus strengthening their position in competing with the European customers.³² This increased the financial dependence of the factory on its middlemen—the merchants. The merchants also rendered the factory other valuable services³³—granted credits, exchanged money, and transported it, served as guarantors and what was most important lent aid in establishing contacts beyond the territories under the direct influence of the Estado da India. This was also connected with the necessity of selling goods brought from Europe, such as copper, quicksilver, alum, coral, as also spices from Malabar and Indonesia (cloves, nutmeg and mace). The Portuguese factories in a short time became accustomed to sell these goods in the ports of Gujarat. In exchange they bought local fabrics in demand in Malabar and necessary in the trade with Ethiopia, East

30. The Christians (such as Matyas of Kainkoilan and Bragaida Tequietome), though employed as caterers of spices for the factory much earlier, gained their importance only in the twenties. Cf. *Cartas* I, p. 58, III, pp. 30, 41; Barros, *Da Asia* I/IX/4, p. 381; Ramusio, *op. cit.*, I, p. 137 v; Panikkar *op. cit.* pp. 100-1, 108.

31. In 1520 Nune de Castro wrote about seven or ten most important merchants working for the factory. He names Khoja Amapola, Abram Mapola Cunheviray and Matepula, all of them from Idappalli (Repolim), purveying about 3 thousand *bahar* of pepper. Ite Couna Nair played the same role in Cranganor, *Cartas* VII, p. 154. Till their leaving Cochin the main partners of the factory were the family of Marakkar, *Cartas* I, pp. 49, 320; II, p. 361; III, pp. 257, 401.

32. Laval, Pyard, *De voyage* . . . , Paris 1615, I, pp. 470.

33. *Cartas* V, p. 480; VI, no DCLXXXIII. These services could be expected only on the part of great merchants, who had a trade organization, capital and could grant credit. *Cartas* I, pp. 306-7; I, 273; III, p. 323. Ramusio *op. cit.*, I, p. 136; Barros, *Da Asia* II/IX/4.

Africa and the Spice Islands.³⁴ Trade with Gujarat aroused the interest of the Portuguese also, because of the quick and large profits it brought.³⁵ Though the Portuguese settled in Diu, Daman and Bassein, and could rely on Chaul, the control imposed by the Portuguese over this trade was not strong enough to meet the competition of the merchants and goods brought from the West.³⁶ Merchants from Gujarat were also dangerous competitors, as they took an active part in the export of pepper from Malabar.³⁷ The aid of the Malabar merchants was thus absolutely necessary to supply the factory with the badly needed cash. Owing to this the factory participated in Asian trade, the base of its existence, often under the name of Malabar merchants. In such a situation the factory had to agree to exchange between the North and the South. The extent of this trade and its significance for Malabar's food supply were so large that the factory could neither replace nor stop it. The aid of the merchants, especially the credits they granted, enabled the factory to carry on a more buoyant policy in purchases. If money received for goods brought from Europe was the only

34. *The Suma Oriental* of T. Pires, pp. 497-98, *Cartas I*, pp. 225, 300; V, p. 168; VII, pp. 41-2, *Cartas do quitacao do Rei dom Manuel*, ed. B Freire, *Arquivo Historico Portugues* nos. 64, 166, 239, 256, 289, 300; *Lembraca das cousas da India* in: *Subsidios*, *op. cit.*, passim; A. Nunes, *Livre des pesos* . . ., *ibidem*, p. 41. Cf. Meilink-Roelofs M. A. P., *Asian Trade and European Influence in the Indonesian Archipelago between 1500 and 1630*, 'S-Gravenhage 1962, p. 12, 157 ff.; Van Leur, "On early Asian Trade" in: *Indonesian Trade and society, Essays in Asian Social and Economic History*, The Hague-Bandung 1955, pp. 127, 133 and "The World of Southeast Asia", *ibidem* pp. 211; Raychaudhuri, T., *Jan Company in Coromandel 1605-1690*, 'S. Gravenhage 1962, pp. 1-2.

35. Reaching 150% on the route Goa-Cambay-Goa. *Cartas III*, p. 69, 99, 195. Other directions, except the trade with China (300%), allowed the profit of about 100%, (Cambay-Aden, Malacca-Bengal and Coromandel); Trade between islands of the Indonesian Archipelago-brought about 30-50%, *The Suma Oriental*, pp. 507-8.

36. *Cartas I*, pp. 222, 224, 267, 272, 357; III, pp. 69, 84, 258, 327. On the preference of ready money from Cambay see *Cartas I*, p. 180. Cf. *ibidem* VII, p. 175; *Corpo Diplomatico Portuguesa . . . Relacoes com a curia romana*, ed. Redbello da Silva, v. IX, p. 114; *Gavetas de Torre do Tombo*, III, p. 215; I, p. 776 (a letter of Manuel de Sousa for John III, Goa, Oct. 18, 1545).

37. Khoja Sofar of Surat played the leading role here in the forties. *Gavetas do Torre do Tombo III*, p. 215; *Cartas de S. Botelho* in *Subsidio*, *op. cit.*, p. 2. The Portuguese had here their partners like Khoja Saansi ed-din (? Kanacadim?), yet the price of their service was extremely high and the profit frequently doubtful. The demand for copper in North India is explained by its usage as currency too. The merchants from Gujarat were highly valued partners because of their developed methods of turnover and accounting. The Portuguese were quite primitive in this respect. See Ramusio, I, pp. 119, 162. *The Suma Oriental*, pp. 317, 366-9; Pyrard de Laval, *op. cit.* II, pp. 187-9; Barbosa, *Livro*, p. 283.

means of payment, the time needed to complete the transaction and purchase came to about a year and a half from the arrival of the fleet, and in course of time even longer. This is not however a proof of the failure of the above mentioned activities aimed at assuring the factory the supply of the ordered quantities of pepper.

The Portuguese gained a chance of carrying out more effective trade operations by applying force and by a gradual grant of concessions. Reducing the threat of military force and securing the necessary cooperation with the merchants, the Portuguese undermined the bases of their presence in the East. Several factors, as we have seen, contributed to such a state of affairs; the most important of them seems to have been the absorption by the Estado of resources gained by the factories in the Asian trade. The needs of the Estado and the greed of the participants in the expansion were such that there were not enough means for the equipment of the fleet envisaged by the Casa da India (that is 1.5 million kg annually). Such a state was an absolute necessity, as the maintenance of the fleet, and investments in trade contributed to the consolidation of the already occupied positions. Even from the point of view of the trade in pepper, the maintenance of the river fleets for the security of transport, attacked by Corsairs, fortresses on the coast (Cranganore, Chaliyam) and in the hinterland (e.g. at Vadakkumkur), and the fleet for patrolling the coast were sheer necessities.³⁸ In this situation it is not surprising that a big portion of the pepper handled by the factories went either legally or illegally to the Asian markets. This assured the factory cooperation and profits which would have been impossible if they only implemented duties mapped out by the king.³⁹

The export of pepper to Lisbon was becoming a burden for the factory, a probable result of the system described above. To make

38. *Cartas de S. Botelho*, p. 38. Cf. his remarks on the expenses of Estado in *Tombo de Estado da India*, and J. Aubin, *Le Orçamento de Estado da India de A. de Arfeu*, *Studia IV*.

39. The profit was quite clear to Albuquerque as he pointed out (on Nov. 4, 1510) that the factory was able to purchase more spices than could be absorbed by Portugal, *Cartas I*, p. 425. The main question was who would control this export and derive profit from it. Despite, however, the royal intention, it enriched mainly the factory's and Estado da India's administrative personnel. Cf. *Cartas III*, pp. 69: 72, 325, 349; IV, p. 72.

the purchase and shipments to Lisbon possible, a situation was created in which this originally primary task was becoming a secondary activity.

In the course of time the primary aim of the factory receded into the background, just as changes took place in the relations between the factory and the Estado, and there was no longer any relationship between the quota of deliveries shipped to India and the quantities of pepper shipped to Lisbon.

It is worth remembering that competition was a major factor in the pepper trade. The most dangerous competitors of the factory at Cochin were merchants coming from beyond Malabar. The Arabs coming from ports ranging from Cairo to Maghreb were always very active in pepper purchases. In the course of time, the most dangerous competitors proved to be Muslims from the north of India, Chaul, Surat, Dabul and other ports of Gujarat and Konkan. Their ships arrived in Malabar in July and August, that is before the arrival of the fleet from Lisbon and before the ships responsible for the blockade of the coast left Goa.⁴⁰ The export of pepper to the north was against the interest of the factory. The struggle to avoid this was however very difficult not only due to the resistance of the opponents and the corrupted officers of the Estado da India but also due to the factory's own policy.

A detailed differentiation between the forms of competition and cooperation is not always possible. The armed intervention on the Arabian Sea and the compulsory use of safe conduct letters were means aimed at persuading the merchants to cooperate. They were however not very effective ways of facing competition. It is worth stressing that the activity of the Portuguese aimed against the merchants of Northern India served two contradictory and at the same time closely connected aims—competition and cooperation. The situation was however different in the beginning of the expansion, when the main opponents were merchants exporting pepper to the Red Sea coast. The main task was then to deal a blow to the Zamorin through its alliance and crush the resistance of Calicut, and not to persuade the merchants to co-

40. *Cavetas do Torre do Tombo* III, p. 215.

operate.⁴¹ It is clear that actions undertaken against the merchants were connected with competition in purchasing pepper, but it was not the major issue. The Portuguese had to agree to exports independent of the factory for they were not able to stop them as long as they did not manage to subdue the coast.

It is thus evident that both in the beginning of the century and also later, pepper was shipped by-passing Cochin and the Portuguese control. This was facilitated by an indentation of the coast and a well developed fleet of ships adapted to river and coastal shipping. This gave bigger ships the possibility of quick transshipments without entering river estuaries and bays. A common practice was trans-shipment during the night.⁴² Small ships sailed not only along the coast but also to Ormuz and the Red Sea. As a rule they did not come from Calicut but from various small ports of Kerala and Kanara.⁴³ The long survival of such shipping and export of pepper indicates in my opinion the ineffectiveness of repressiveness in trade competition. It was however an effective way of persuading the merchants to accept the existence of factories in the Asian trade.⁴⁴ To make the merchants cooperate with the factory was for the latter a mere necessity, connected with the factory's existence. The opponents and competitors of the factory came from

41. The Portuguese attacked the merchants for supporting Zamorin and not because of their Red Sea navigation. They were of course Arabs coming primarily from Cairo, Jeddah and Aden, Barros, *Da Asia*, I/IV/9 I/VI/2, Boxer, "Portuguese in the East 1500-1800", *Portugal and Brazil, An Introduction*, Oxford 1953 passim. These interventions did not reduce the trade of Calicut. The Muslims arrived with cash and Gujarat cloth in September, made purchases, built new ships and sailed away. The Portuguese threat still raised the profits of this enterprise, *Cartas* I, p. 126. For Arab navigation on the Arabian Sea, see *Cartas* I, pp. 95, 98-99; II, p. 397; III, pp. 40, 50, 195, 335; Barros, *Da Asia*, I/VII/11; Cessi R., *L'itinerario Indiano de F. Boccher del storiche Rendiconti della classe di scienze morali e filologiche dell'Accademia Nazionale dei 1518*, Linzei, Serie VIII, v. VI, Roma 1951, p. 240; Civico Museo Correr (Venezia), Me Dandolo, P. D. c. 975; *Informazioni al senato et lettere del Console di Alessandria, de Damasco in Siria* . . . 1508-11, a letter of June 13, 1509.

42. *Cartas* I, pp. 127-8 Comp. III, pp. 323, 325 and *Gavetas* III, p. 212.

43. Civico Museo Correr, *loc. cit.* Nov. 17, 1508; Archivio di Stato di Venezia, Consoli Alessandria, f. 1, Jan. 11, 1554, May 15, 1555; June 12, 1555 (Letters of Tiepolo) and others. Tucci, U. *Lettres d'un Marchand Venitien. Andrea Berengo 1553-56* Paris, 1957, p. 282; Lane J. C., "The Mediterranean Spice Trade." *The AmHR* SLV, 3 April 1940, p. 586; Braudel, F., *La Méditerranée et le monde méditerranéen à l'époque de Philippe II*, Paris 1949, p. 433 gives information on pepper trade in the middle of the XVIth century. The role of smaller ports in the pepper export was considerable, *Cartas* I, o. 127; II, pp. 185, 361, 391; III, pp. 39-40; VII, p. 174; Barros, *Da Asia* II/1/6.

44. *Cartas* I, pp. 40-41.

the same group as its cooperators. The richer they were and the bigger was their business the more valuable was their assistance, and the more difficult was it to secure it. This caused the necessity of increasing pressure, covering increasing expenses and making more and more concessions. In this context the factory intended to regulate the activity of the merchants according to its own interests. The efforts made for the sake of cooperation and necessary concessions undermined however the attempts at domination.

We are then dealing with a quite different situation. Groups of merchants from Cochin, Quilon, Cannanore and other localities cooperated with the factory to take advantage of its presence for their own interests. It was also important to reduce the danger of Portuguese military intervention in Malabar by creating connections between the newcomers and the existing set up. The position of the rich merchants was very advantageous, and they could always evade the Estado da India's sphere of influence. Thus, many merchants left Calicut in the first decade, moving to Vijayanagar, Aden and Ormuz. Also a group of merchants moved from Cochin to Calicut in 1524.⁴⁵ Cooperation with the factory and the raja of Cochin was to assure the merchants better possibilities of evading the control the Portuguese tried to impose on the export of pepper from Malabar. To some extent cooperation was a necessity for both sides. The forms of this cooperation were shaped by the relations and needs of both sides. Relations between the factory and the merchants were facilitated by the passion for making money common among the Portuguese.⁴⁶

× × × ×

The *fidalgos* going to India not only wanted high posts and promotion but also income from land granted to them and from plunder. Apart from that, all of them intended to make money on

45. Zanadim, *Tofhut al Mujahiden, Historia dos Portugueses no Malabar*, ed. D. Lopes, Lisboa 1898, p. 52; *Cartas I*, p. 126; *The Book of D. Barbose II*, p. 71.

46. *Cartas I*, pp. 45-6, 296; *III*, p. 299; *IV*, p. 39; Barros, *Da Asia I/VI/1*; Couto D., *O Soldado pratico*, Lisboa 1954, pp. 27-8, 38-9, 49, 81, 84, 88, 101; Sansom G.B., *The Western World and Japan*, London 1950, p. 83; Boxer, *op. cit.* p. 212.

trade.⁴⁷ Everything was to serve this aim. Both senior and junior officers took into consideration trade which would bring big profits. Less attention was paid to the contraband trade to Lisbon than to the export of attractive goods from Europe, ostensibly a royal monopoly. Their lack of interest in trade with Europe made possible the establishment of the monopoly of the Casa da India. Private capital was invested in Asian trade, advantage was taken of the royal *naos do trato* granting people with important connections the right of free transport.⁴⁸ Contacts with Asian merchants was established through the factory. For those private dealers these contacts were an important base of their activity. The *fidalgos* did not have much cash and were inclined to spend it on consumption. They therefore readily took advantage of local credit. Concessions granted to partners were a price paid for the possibility of a quick and easy profit. They granted these readily as the possible losses did not concern the private resources of the royal officers.

In the course of time, the factory became first of all a shield for the private trade of the factors and the Estado da India's officers. A long time passed before the Portuguese private trade in Asia could do without the aid of the Estado. Even in Pegu and Bengal where the supremacy of Goa was not recognized in the 16th century, they took advantage of the protection of Goa. Wherever the influence of the Estado was not strong and possibilities of repressions small, the structure of private trade was different. The magnitude of the Portuguese private trade in the Malabar was even bigger because it took place *de facto* in the factory. Private trade in pepper was considered especially profitable, but had to be done secretly as it was a royal privilege. This only speeded up the process of bringing nearer the interests of the officers of the factory and the merchants. Trade northward created complicated problems, but to

47. The problem was best described by D. Barbarigo in 1554: "Ma detti Portoghes volendole expedire con sui vantagio de lisenza saputa del suo Re, le vendono a mori, le comportano che le navigheno per il mar Rosso, e questo procede perche li capitani et soldati Portoghesi che custo discono quelle forteze . . . sia poco tempo sone diventati mercanti", Poma C., *Il consolato veneio in Egitto . . .*, *Bollettino del ministero degli affari esteri*, Oct. 1897, n. 109, p. 24.

48. *Cartas I*, pp. 142-3, 160; Kammerer A., *La Mer Rouge et L'Arabie depuis l'antiquite. V. II, Les guerres du poivre, Les Portugais dans l'Océan Indien et la Mer Rouge au XVIe s.*, Cairo 1935, p. 292. J. Gentil da Silva, *Contratos da Trazida de drogas no Seculo XVI*, Lisboa 1949, p. 7, *passim*.

Ormuz and Jeddah it was quite easy. Export in this direction bypassing the factory's warehouses was facilitated for the Portuguese by the merchants from Cochin and other ports. The purchases of pepper for this purpose were done not only using the system created by the factory and its suppliers but often ostensibly on behalf of the factory and by using the cash at its disposal.⁴⁹ The factory, as already mentioned, exported considerable quantities of pepper to the Asian markets, especially to China and Gujarat. Even more shipments were sent belonging to private persons.⁵⁰ They were sent direct to the Red Sea, and handled by the Asian merchants. The shipments were carried by local ships and the participation of people from the factory in the business assured them a considerable security during the voyage. It is no wonder that in such circumstances the blockade of the coast was a fiction. Apart from that, the blockade was really aimed against this shipping, and at weakening Calicut, especially in the second half of the century. It was the last attempt undertaken to secure Cochin, a monopoly for the export of pepper, and subjugating Calicut.⁵¹ The existing balance of power however made it impossible both for the factory and the Estado to conduct a different policy based on the superiority of the newcomers. The policy conducted by the factory in Cochin was the only possible and logical policy one could conduct in such conditions. This does not however change the fact that this policy was against the recommendations of the Casa da India and the interest of the monarch.

The factory also played a role in organizing private trade which was important in connection with the increasing prices. The prices of pepper increased not only because of the increasing demand; a rapid growth of the interest of the Portuguese in cotton fabrics from Gujarat increased their supply to the Malabar market, reduc-

49. *Cartas I*, pp. 268, 330, II, p. 75; *Cartas do s. Betelhe*, p. 16; *Gavetas do Torre do Tombo III*, p. 212; *Archivio di Stato di Venezia*, Consolito Aless., f. 1, June 19, 1556.

50. *Cartas I*, pp. 154, 159, 323, 329, 330; II, pp. 69-70; *Corpo Diplomatico Portugues IX*, p. 136; Strapling, *The Ottoman Turks and the Arabs 1511-1574*, Urbana 1942, p. 93. Export to China was the most attractive, but only for those occupying the highest positions. This did not at all concern the export to Ormuz. Cf. *British Mus. Add.* 28461, p. 227.

51. *Cartas I*, p. 122, II, p. 112.

ing their price, which had the effect of pushing up the price of pepper purchased in exchange for these fabrics.⁵² A similar effect was produced by the trade of the newcomers from Europe. They tried to get rid of the goods they brought from Europe, selling them through the local dealers. As these were mostly brought illegally the newcomers really accepted relatively lower prices. Most often this resulted in a general fall in the prices of the goods brought, among them metals, and in turn, an increase in the price of pepper purchased for a long time, at least partly for copper.⁵³

× × × ×

Thus the factory was absorbed and assimilated into the Asian trade. Consequently the destructive results of the factory's activity were considerably reduced; it was transformed and adapted. This took place through the necessity for cooperation between the factory and the merchants. The illegal pepper trade was then a component part of the system created to assure the best conditions for those taking part in the expansion.

The role of the factory in the pepper trade was rather small and its influence on the production of pepper only indirect. As in many other cases here also the Portuguese factory sponged on the local economy and trade. The increase in the volume of the trade in pepper in Asia, and possibly in the production of the commodity took place in the 16th century in spite of the European expansion, but not owing to it.

The Estado gave the Malabar factories and the Portuguese an opportunity for exploitation; the forms of this exploitation were in the course of time shaped by the factory's practices. It is evident that the factory developed within itself elements of self-destruction, from the first moment it "started to fall into pieces", i.e., departed from the norms set by the Estado and the Royal Government. Paradoxically enough, in this specific sense, the only factory that ever existed was one that was falling into pieces. When the power

52. *Cartas I*, pp. 24, 273.

53. *Cartas I*, p. 329.

of the Estado became purely nominal, the role of the factory came to an end. The Portuguese merchants remained rich as a result of their century long activity, ready to start individual trade and face the competitors coming from Northern Europe.

The Silver Currency Output of the Mughal Empire and Prices in India During the 16th and 17th Centuries

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The 16th and 17th centuries witnessed two remarkable phenomena in European economic history, namely, the price revolution and the great influx of silver and gold into Europe from the Americas. Most historians have held the one to be largely the result of the other. Though there may be considerable dispute as to the exact nature of their interconnection, and the relative scale of the bullion influx (relative, that is, to the stock of precious metal already existing in Europe), there may not be much disagreement with the view that these phenomena were not confined, in their consequences, to Europe alone.

Surprising as it may seem, the exact contrary was implicitly assumed in much of the writing on the economic history of India;¹ although as early as 1786 James Grant had referred to the effects on 17th century Indian prices of "the extraordinary influx of specie from the American mines."² Only in some recent writing has there been appreciation of the possibility that both the bullion influx and the rise in prices could in due course have extended to India from Europe.³

Unfortunately, the evidence on both these points, though suggestive enough, is not statistically very satisfactory.

For example, while throughout the 17th century allegations continued to be made about the enormous drain of bullion from

1. W.H. Moreland, *Akbar to Aurangzeb*, London, 1923, and Brij Narain, *Indian Economic Life, Past and Present*, Lahore, 1929.

2. See his 'Analysis of the Finances of Bengal', written in 1786, and included in the *Fifth Report*, . . . , ed. Firminger, Calcutta, 1917, II, p. 483.

3. Irfan Habib, *Agrarian System of Mughal India*, Bombay 1963, pp. 392-94; K. N. Chaudhuri, *The English East India Company, 1600-1640*, London 1965.

Europe to the East, especially to India, the quantitative information so far available is defective and incomplete.⁴ There is the further question whether these new supplies added sufficiently to the existing silver stock in India (particularly in the Mughal Empire, where silver was the basic currency-metal) so as to cause a substantial expansion in money supply. Owing to the disappearance of Indian mint records we have no direct information of the total output of Mughal silver currency at any time. It should, therefore, be of some interest to consider a device whereby we may yet be able to construct a curve of the annual silver-currency output of the Mughal Empire.

Before explaining the device that we are suggesting, it is worth giving some known facts about the Mughal currency system. Mughal currency was based on silver, the basic unit being the rupee coin which retained practically the same weight and standard (which was of very high metallic purity) throughout our period (i.e. until 1707). The Mughal system, moreover, was of 'free' coinage; that is, it was open to anyone to take bullion to the mint and get it coined into rupees, at charge.⁵ There was, therefore, no debasement at any time, and the value of the rupee was more or less closely linked to the market value of silver. Usually, the rupee carried a price in bullion somewhat in excess of its own weight. Given such a minting system, we may indeed assume that any increase in the stock of silver in the country was likely to have caused an expansion of the output of rupee coins. Since at least during this period, there was

4. Cf. for example the statement of Davenant that "the Silver and Gold brought from America and Silver produced from the European mines during the last 200 years, amounted to 800 million pounds. I can not find what is become of the 800 million dug out of the earth unless 150 millions of it was carried away and sunk in the East Indies." S.A. Khan, *The East India Trade during 17th century*, p. 269. No better estimates of the total European exports of bullion to the East exist, to my knowledge. The statistics of the bullion exports through the auspices of the English East India Company are important, but cannot in themselves suffice even as an index of fluctuations in total exports, since the Company's own share in such exports grew from an insignificant proportion at the beginning of the 17th century, to a very large one towards its close. However, for what they are worth, these statistics have been used later on in this paper. Similar figures for the Dutch Company's bullion exports are not available to me, though K. Glamann, *Dutch Asiatic Trade, 1620-1740*, pp. 56-7, 61, refers to records containing these details, and on their basis offers a general estimate of annual export of 1 to 2 million florins during the latter half of the 17th century.

5. See S.H. Hodivala, *Historical Studies in Mughal Numismatics*, Calcutta, 1923, pp. 235-44; Irfan Habib, 'The Currency System of the Mughal Empire, 1556-1707', *Medieval India Quarterly*, Aligarh, Vol. IV, Nos. 1-2, pp. 3-4.

no domestic production of silver,⁶ any increase in India's silver stock could have come only from imports. It may thus be supposed that, allowing for remintage, the fluctuations in Mughal currency output should have reflected faithfully the ebb and flow of the silver influx into India.

We may now describe the method by which we intend to build up our currency-output curve.

Mughal coins always bear the name of the mint from which they were issued, and, for the reason that this affected their values slightly,⁷ also give the year in which they were minted. The latter fact enables us to assign the number of the Mughal coins preserved to definite years. Now, if we tabulate and add up the total number of coins of each year preserved in the various existing collections, we may get an indication of the relative quantity of silver currency issued each year by the Mughal mints. If the annual variations in the number of the coins preserved faithfully represent the variations in the total annual currency output, then, while reconstructing a curve of the total number of coins preserved, we may really be reconstructing (upon a scale which remains unknown to us) the curve of the currency output of the Mughal empire.

I have, therefore, tabulated, year by year, the number of rupees and their silver fractions, catalogued and preserved in the Indian Museum, Calcutta; the British Museum; the State Museum, Lucknow; and the Lahore Museum and Rodgers' collection (Table 1)⁸.

6. Moreland, *India at the Death of Akbar*, London, 1920, p. 137. Cf. Watt, *The Dictionary of the Economic Products of India*, London, Calcutta, 1893, Vol. VI, Part iii, pp. 238-43.

7. I. Habib, 'Currency System of the Mughal Empire,' *Medieval India Quarterly*, Vol. IV, Nos. 1-2, pp. 4-6.

The premium enjoyed by the *sikka* rupee over *chalani* was of about 2 per cent, and that of the *chalani* over the *khazana* rupee of 1-3 per cent.

8. (a) *Catalogue of Coins in the Indian Museum, Calcutta*, by N. Write and *Supplement to the Catalogue of Coins in the Indian Museum Calcutta*, Vol. III, by Shamsuddin Ahmad.
 (b) *The Coins of the Mughal Emperors of Hindustan in the British Museum* by Lane-Pool, ed. by R. Stuart Pool.
 (c) *Coins of the Mughal Emperors of India* collected by C.J. Rodgers, and published by the Punjab Government.
 (d) *Catalogue of Coins in the Government Museum, Lahore*, by C.J. Rodgers.
 (e) *Catalogue of Coins in the State Museum, Lucknow*. (2 vols. on Mughal coins).
 (f) *Supplementary Catalogue of Mughal Coins in the State Museum, Lucknow*, by C.R. Singhal.

The total number of coins bearing years of mintage is so large relatively to coins which lack any indication of their year of issue that we can practically disregard the latter category. Only 4.9% of the coin of Akbar (1556-1605), 3.4% of those of Jahangir (1605-27), 3.9% of Shahjahan (1628-58) and 0.7% of Aurangzeb (1659-1707) have lost the years that were stamped on them.

The number of coins to be taken into consideration is also very large in absolute terms. In making up the totals in the Table I have adopted the method of taking all the standard rupees as units, the *sawai* and *rupya-i-Jahangiri* as equal to 1.25 and 1.20 respectively and the smaller silver coins at par with their fractional values. The totals for the four reigns are, then, as follows: 1739 Rs. of Akbar (1556-1605), 1346 Rs. of Jahangir (1605-1627); 1556 Rs. of Shahjahan (1628-58) and 2426 Rs. of Aurangzeb (1659-1707); in all, 7,067 rupee-coins.

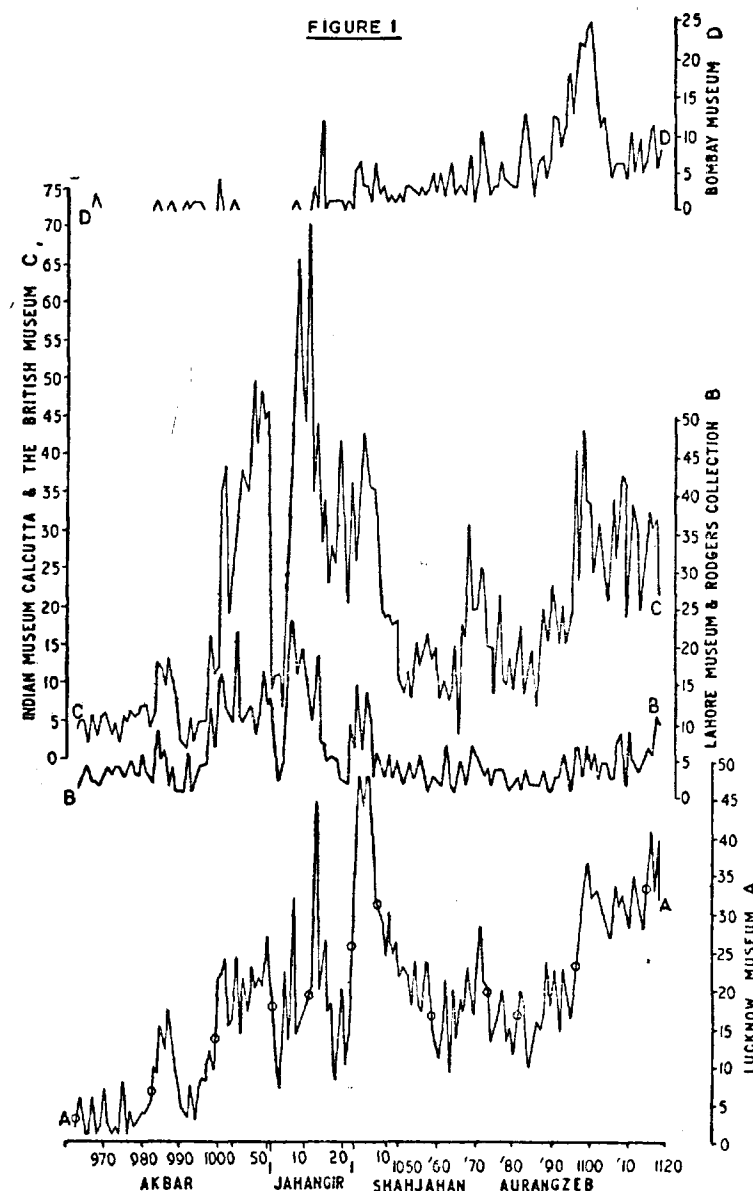
In assigning the coins to various years the following system has been adopted:

1. *Hijri* years from the year of Akbar's accession, 963 A. H. to 1000 A.H., since almost all coins, except the few of the later years of the period, carry the *Hijri* year.
2. (a) Beginning with the 38th regnal year of Akbar to his death, 50th regnal year in the *Ilahi* calendar. The Salim Shahi coins and those coins of Jahangir which bear the *Hijri* year 1014 have been assigned to the 50th R.Y. of Akbar.⁹
- (b) From the first regnal year of Jahangir to the 22nd regnal year of Jahangir in the *Ilahi* calendar. Shahjahan's coins of

⁹ *The Catalogue of Coins of the Mughal Emperors*, by M.K. Husain, Bombay, 1968, represents the Bombay Collection. This catalogue contains 620 Mughal coins from our period (1556-1707). I have not used this, for the reason that owing, probably to its drawing coins mainly from the Deccan, the collection contains few Mughal coins before Shahjahan's time, while the reigns of Shahjahan and Aurangzeb, during which the Deccan was gradually annexed, are much better represented. Moreover, the Deccan and Gujarat mints are more heavily represented than the North India. This collection, however, has been shown on Fig. 1.

Lists of very small collections or sundry finds have not been considered, partly for avoiding possible duplication, since such coins might have found their way later into the larger collections whose catalogues form the basis for our calculations.

9. For the dating of the Salim Shahi coins see the article, Geo. P. Taylor on the dates of Salimi coins published in *Numismatic Supplement*, No. 1, 1904, pp. 68-73; also Vol. V, No. 8 August 1909, p. 346.



1037 A.H. but without any R.Y., have been assigned to Jahangir's 22nd regnal year.

(c) From the 1st R.Y. of Shahjahan to the 10th R.Y. in the *Ilahi* calendar.

During the period of the 38th R.Y. of Akbar to the 10th R.Y. of Shahjahan while most of the coins bear the *Ilahi* years, some bear *Hijri* years only and have been converted into the *Ilahi* years; but there is always a chance of error by one year. However, since as a rule successive *Hijri* years have been equated with successive *Ilahi* years, the net possible margin of error would be very small.

3. From A.H. 1048 to 1118 the *Hijri* calendar has been followed. After his tenth R.Y. calculated by the solar calendar, Shahjahan instituted a fresh calendar for his regnal years in terms of the *Hijri* era, each year beginning from Jumada II, 1037 A.H.¹⁰

Similarly, Aurangzeb calculated his R.Y. in terms of the *Hijri* calendar each year beginning with the first of Ramazan. Most of the coins of these two Emperors give the *Hijri* year and when some of them give only the regnal year, it is a simple matter to convert them into *Hijri* years.

Coins of Dawar Bakhsh are included among the coins of Jahangir, and those of Shuja and Murad Bakhsh among the coins of Shahjahan.

This completes the first step, and the results are given in Table I appended to this paper. As the table shows, the variations from year to year are substantial, yet the trends are pretty well marked so that there are periods of different durations of which the coins preserved become markedly more numerous or as markedly scarce. This should be sufficient to meet a possible objection against our method, viz., that coins have survived in different proportions of the total issue at different times. For the survival rate should generally be higher with the passage of time. If variations were due to changes in the rate of survival, we should have expected a steady increase in the number of coins rather than these sharp fluctuations. Another possible objection may be that the collector's interest might have resulted in the preservation of certain curious coins and

10. Hodivala, *Historical Studies in Mughal Numismatics*, Calcutta, 1923, p. 271.

therefore artificially inflated the numbers of coins of certain years. Here again, since the Mughal rupees were by and large of a uniform type, in most fluctuations the curiosity of the coin-collector does not seem to have played a part. Where certain curiosities are in fact found, such as the coins bearing the names of Nurjahan, and the *sawai* and *Jahangiri* rupees, they are so few as to hardly affect the totals. The only exceptions to this may be the preservation of the zodiacal coins, whose number in the 13th R.Y. of Jahangir appears to be large. But since the zodiacal coins were issued in the other years also, it is difficult to attribute the increase in the 13th R.Y. mainly to the industry of the coin collector. In the 13th year, the numbers of the ordinary rupee are also exceptionally large, so that the same tendency is exhibited in the ordinary rupees as in the special variety.

There is one further point to consider. It may be thought that our totals are built up of numbers of coins in collections which individually may be richer in coins in particular years or a particular period, so that the trends appearing from the total alone may be misleading. But in actual fact the trends witnessed in the aggregate are also witnessed in the totals of each individual collection. This is illustrated in Fig. 1, where the four curves show respectively the totals of coins year by year in the collections of the Lucknow Museum (A); the Lahore Museum and Rodger's personal collection (combined) (B); the Indian Museum and the British Museum (combined) (C), and the Bombay collection (D).¹¹

Once we are aware that the figures we have obtained of the coins issued each year are not mere accidental agglomerations but may probably reflect the ebb and flow of annual currency output in the Mughal Empire, we can go on to construct a curve based on these figures; and it may be treated for practical purposes as the currency output curve with the proviso, of course, that the actual scale for the curve cannot be determined. But in order to do this, for purposes of comparison and convenience of reference, we have to convert the *Hijri* and *Ilahi* years into years of the Christian era. Again, in order to spot the more stable trends it would seem better

11. The British Museum collection is very small; it has, therefore, been combined with the collection of the Indian Museum, Calcutta.

to attempt a histogram of five yearly totals, rather than a curve of annual totals.

The assumption that I have followed is that each *Hijri/Ilahi* year corresponds with that Christian year within which its major part falls. For the *Ilahi* years this creates little difficulty since each of them begins in March and thus corresponds in our scheme with the Christian year in which it commences; and since we are taking five yearly periods the deviations from the true figures would be very small. With the *Hijri* years the conversion is not such a simple matter. These are lunar years; and each *Hijri* year is thus shorter than the Christian year by ten or eleven days. Therefore, after a lapse of some years, two *Hijri* years have corresponded with a single Christian year because the larger part of both falls within it. Now when this happens, that particular slab in our histogram would actually be representing not the total of five but of six years. In such cases¹² the total has been reduced by one-sixth in order to eliminate this artificial inflation of the total. It means admittedly that on the whole the height of the histogram would be lower during the period when the *Hijri* years were in use in comparison with that when the *Ilahi* era was followed. The mean deviation, however, would be less than 3% which is the difference in the length of the solar and lunar years, and such a difference can be disregarded.

The histogram aims at representing the total of silver coins issued in Northern India. Therefore, (a) the initial year chosen is 1570 and not 1556; and (b) the issues of the Deccan mints have been excluded.¹³ In this way although the number of mints from which the rupees were issued varied, the region remains unaltered and unaffected by the annexations made by the Mughals in the Deccan. The mints in Afghanistan have however been included, although Kabul was annexed only in 1585 and Qandahar was in Mughal occupation only for a part of the period.¹⁴

12. A.D. 1666-70; and A.D. 1696-1700.

13. The southern mints, whose issues are not included are:

Ahmadnagar, Ahsanabad (Kulbarga), Alamgirpur, Aurangabad (Khujista Bunyad), Bijapur, Burhanpur, Chinapatan, Daulatabad, Elichpur, Golkonda, Haidarabad, Imtiyazgarh (Adoni), Nusratabad (Dharwar), Qamarnagar (Karnol), Sholapur, Zafarabad and Zafarnagar.

14. Since the Qandahar mint, when under the control of the Mughals, issued coins, which would otherwise have been minted at Multan and Thatta, it will be misleading to exclude its issues from our figures. The Kabul mint throughout the period issued only insignificant quantities. The total coins preserved from the two mints amount to Rs. 243.7.

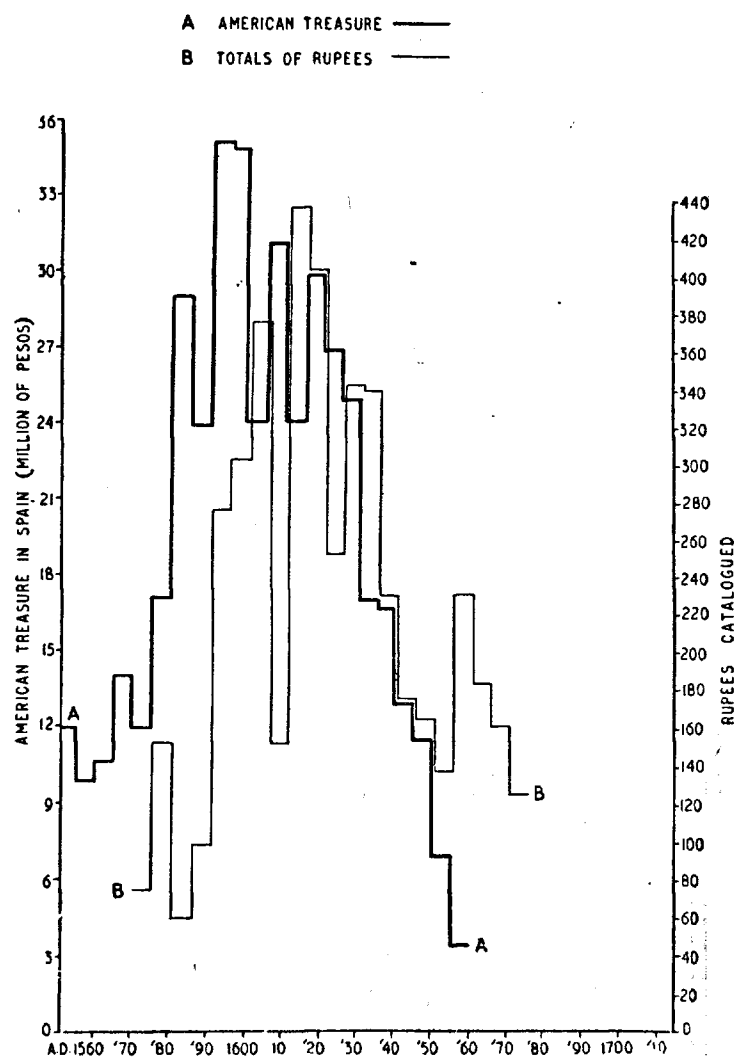
With this histogram in our hand, we are in a position to define periods when the silver currency output increased substantially or howed a marked decline. Both as a test for our assumption that represents shifts in actual currency output and also for understanding its association with the pace of silver influx into the country from Europe, it is of some interest to compare it with the histogram of the five yearly volume of the import of American treasure into Spain based on the standard work of E. J. Hamilton.¹⁵ Since at this time the American mines were all under Spanish control, these imports actually represented the vast bulk of silver¹⁶ brought into the Old World from the New (except for such "leakages" as were made through smuggling or by the English and Dutch plunder of Spanish ships).

Figure 2 offers a comparison between the data for the influx of American treasure into Spain and the five-yearly total of rupees reserved. It will be seen that the correspondence in the two histograms, allowing for a natural time-lag, is remarkable. Indeed, it seems that even minor ascents and descents in the first are reflected in the second. Thus the peak of the imports of American treasure reached in 1566-70 is reflected in a similar increase in Indian coins in 1576-80, while a decline in the Spanish treasure influx during 571-75 is reflected in a similar decline in the Indian coins during 581-85. The great and steady increase in the influx of American treasure, beginning with 1576-80 and reaching its greatest height in 591-95 with only one decline (1586-90), has its counterpart in a similarly rapid increase of Indian rupees, beginning with 1586-90 and reaching the apex during 1611-15, with again one period of decline just preceding the last ascent (1606-10). It thus seems as if during this period it took about 10 to 20 years before silver reaching Spain could make its way to India, but it did ultimately arrive, and so regularly indeed that the fluctuations in the volume of silver imports into Spain could be faithfully reflected in the Indian

15. E. J. Hamilton, *American Treasure and Price Revolution in Spain, 1501-1652*, Harvard Univ. Press, 1934.

16. Although the treasure includes gold, the share of gold was very small. Thus, whereas 18,000 tons of silver entered Spain from the Americas through official channel between 1550-1660, only 200 tons of gold entered similarly during this period (Heaton, *Economic History of Europe*, Revised Edition, New York, p. 289).

FIGURE 2



imports of silver and the currency output of Mughal mints. The time-lag is not surprising, since during this period the Portuguese retained their monopoly of Europe's sea trade with India and their trade never attained very extensive proportions; and probably a very large part of the silver imports had to come overland and indirectly through the Middle East and Persia.¹⁷

With the coming in of the Dutch and the English, their trade dwarfing that of the Portuguese and their own two Companies involved in unceasing competition, one may expect that the silver imports from Europe would arrive much more rapidly into India and that, therefore, the lines of the two histograms should now approach very close to each other. This can be seen again in our diagram (Fig. 2) from 1611-15 onwards.

By 1621-25, the peak period of the influx of American silver into Spain seems to have passed and a steady decline sets in, which continues until 1660 when Hamilton's data close. This decline is faithfully followed by the totals of rupees in which there is a sharp decline between 1621-25, a short recovery during 1626-35 and then finally a decline lasting until 1651-56. During 1656-60, there is a sharp increase in the number of rupees which seems to be quite inconsistent with the decline of imports of American silver in Spain; and this is perhaps the only inconsistency that can be spotted in the comparison between the two histograms. This may possibly represent a kind of secondary wave in coinage output caused by the reminting of coins first minted during the period of the great influx fifty to thirty years earlier. Or, it may be due to the fact that as the English and Dutch trade with India increased, they began to export not only out of current import from America, but also out of the

17. *The Suma Oriental of Tom Pires* ed. by Armando Cortesao, Hakluyt Society, London, 1944, for silver exports to India from Aden, Ormuz and Pegu (Vol. I, pp. 12-13, 21, 43, 44, 100); Francois Bernier, *Travels in the Mughal Empire*, ed. by V. A. Smith, pp. 202-3; *Indian Travels of Thevenot and Careri*, ed. S. N. Sen (Indian Records Series) Book II, p. 241.

Sir John Welstenholme (member of the Commission appointed by the government to suggest remedies for drain of silver from England) in a memorandum to the Privy Council, 1621, quoted in K. N. Chaudhuri, *The English East India Company, 1600-1640*, London, 1965, p. 120.

The large volume of bullion imports through the Middle East is also suggested by the large output of the north western mints of the Mughal Empire. These constitute 36.7% to the total catalogued silver coins, while the contribution of the inland mints is 23.6%, Eastern, 15% and Gujarat : 24.7% over the entire period.

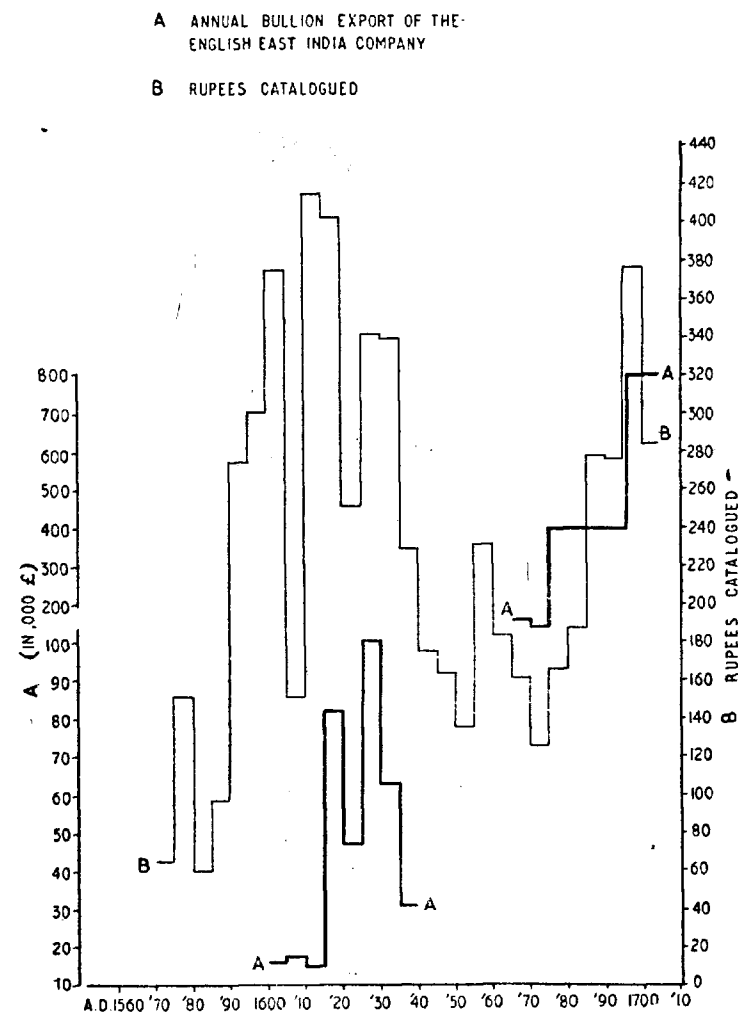
reserves of silver accumulated in Europe; and that the rise in currency output in the later fifties is the first result of such a development.

Unfortunately I have not been able to obtain figures for the imports of silver into Europe from America after 1660. The production of American mines seems to have started to decline from 1630¹⁸, and it is not clear whether any recovery took place during the remaining part of the 16th century. Yet if the numbers of the surviving coins are any guide, Indian currency output began to increase from 1676-80, reaching its peak during 1696-1700, a peak only surpassed during the first two decades of the century. Here a comparison of our histogram of the Mughal currency output with such statistical information as we possess of the English East India Company's bullion exports may be useful. This information is set out in Table II, which takes some liberty with the available information in order to make it suitable for the construction of a histogram. Figure 3 shows this histogram together with the histogram of the Mughal currency output. Much the larger part of the rise in the English Company's bullion export represents merely the expansion of the Company's own trade, as it gained an increasingly large share of Europe's commerce with India. But some of the fluctuations are likely to correspond with those in the total of bullion exports to India. There does not, for example, seem to be any better explanation for the sharp decline in the Company's bullion exports during the thirties (whereafter our histogram shows a break). This corresponds, it will be seen, with the great drop in the Mughal currency output during the thirties. The great increase in Mughal currency output during the last quarter of the 17th century, to which we have just referred, corresponds with a striking increase in the Company's bullion exports during the same period. For purposes of convenient presentation on graph, the scale above £100,000 has been sharply reduced, so that histogram of the English Company's bullion exports, 1600-1640, is not comparable with that of 1665-1705. But what we are concerned with here is the behaviour of the exports during the latter period in relation to that of Mughal currency output; and these as we have just said, happen largely to correspond.

18. John Lynch, *Spain under the Habsburgs*, Oxford, 1964, p. 121.

SILVER CURRENCY OUTPUT OF THE MUGHAL EMPIRE

FIGURE 3



The increase in Mughal silver-currency in the last phase, then, was probably caused by a real drain of silver from Europe, for financing the Indian trade by the Dutch, English and French companies and by private European merchants. The fact of this huge drain is, of course, attested to also by the formidable opposition to the export of bullion which developed in the countries of western Europe during the latter half of the 17th century.

Theoretically, a currency output curve can be converted into a curve of currency in circulation provided that either our output curve starts from the point at which the output of the currency in fact originated, or that we know the ratio of output to the amount already in circulation at the time at which our output curve begins; and, further, provided that we know the rate at which the coins were re-minted (or in the other words the period for which a coin on the average, remained in circulation before going back to the mint.)

Now, with regard to the first proviso, we are at a certain disadvantage in that we do not know anything about the amount of minted silver in circulation at the time of Akbar's accession. But this need not wholly discourage us. We know that in the major portion of Northern India (previously under the Lodis, and then under the first two Mughal Emperors), the pure silver coinage had been introduced only by Sher Shah (1540-45). Before 1540 the principal coin, the *tanka*, was a piece with only a trace of silver in it. The total amount of coined silver in circulation, by 1552, would therefore have been less than the net amount of the total currency output since 1545 (i.e. total output less re-mintage). If, therefore, we total up the number of coins of each year from 1556 to 1592 and make no allowance for reduction on account of re-mintage, we will probably have a total which may in relative terms broadly represent the total amount in circulation. The amount of output of the period 1540-56, and of the kingdoms conquered by Akbar, may be cancelled against the amount that should be reduced from our total of coins of 1556-92 on account of re-mintage. If anything, the starting point on our graph would be distinctly higher than the actual one, since we have counted together the coins of no less than 46 years, within which period many of the coins might have been minted twice over.

The year 1552 is a suitable starting point for the currency-in-circulation curve, also because it is almost certain that by this time the copper coinage had been finally replaced by the rupee as the basic unit for all large money transactions, and for the practical purposes the older billion currency was no longer in circulation.¹⁹

Having established our starting point, we should proceed by adding the number of coins preserved of each year so as to build up our curve of currency-in-circulation. We have however to make allowance constantly for the amount that we may expect to have been re-minted. Unfortunately, on this only indirect evidence is available, and we have to proceed by inferences. We may, first, consider the question of when it would have become profitable to take back a coin to be re-minted. We know that the rate of seigniorage and minting charge amounted to about 5.6% during the whole of the 17th century.²⁰ Now, according to Tavernier a coin generally lost $\frac{1}{2}$ per cent of its value after 'three or four years' of its issue.²¹ If this rate of loss remained constant during the whole lifetime of a coin, it would have lost value equal to the cost of re-minting after a period of 33 to 44 years. At another place Tavernier makes the statement that it was normal to make payments in coins of 15 or 20 or even more years old.²² If the bulk of the coins thus remained un-re-minted after fifteen or twenty years, they could, on average, have been returned to the mint after a much longer period.²³ We can, therefore, broadly assume that coins minted in a particular

19. Irfan Habib, *Indian Economic and Social History Review*, Vol. IV, No. 3, Sept. 1967, pp. 205-32.

20. I. Habib, 'the Currency System of the Mughal Empire', *Medieval India Quarterly*, Vol. IV, Nos. 1-2, p. 3.

21. *Travels of J. B. Tavernier*, Trans. V. Ball, Vol. I, p. 9.

22. *Ibid.*, p. 29.

23. Hawkins, it is true, states that "once in twentie years it (a coin) commeth into the King's power", *Early Travels in India*, ed. W. Foster, London 1921, p. 112. It is not clear whether Hawkins means that a coin returned to the King's treasury once in twenty years (as has been supposed by I. Habib 'Banking in Mughal India', *Contributions to Indian Economic History* I, 1960, ed. T. Raychaudhuri, pp. 1-2) or that it came back for re-minting. If he means re-minting, the basis of his statement might have been the general absence of coins bearing any year more than twenty years earlier. However, since the number of coins catalogued, belonging to the period 1556-90 (578 Rs.) is almost half of that of the period 1591-1610 (1125 Rs.) Hawkins might reasonably be expected to have seen very few coins of 20 years earlier, and may have been misled as a result.

year were largely reminted within a period of forty years.²⁴ On this basis we may adopt the rather rough and ready formula of fixing the allowance for remintage at $2\frac{1}{2}$ per cent of the coins already in circulation. I have accordingly added the coins of each year to the total, and deducted $2\frac{1}{2}$ per cent of the total before its addition, so as to obtain the relative figure for the currency in circulation during a particular year.²⁵

If the curve now constructed (see Figs. 4, 5 and 6) represents, even very roughly, the actual curve of silver money in circulation, the following may be said of the trends shown by it :

1. The amount in circulation rose very steeply in a steady ascent from 1591 onwards, with just two short checks in the rise during 1606-1609 and 1620-28, and reached the peak around 1634, stabilising at the level then reached until 1639. It was now exactly three times the amount in circulation in 1592.
2. The amount in circulation started falling gradually from 1640 and continued to do so till 1684, with only a small rise from 1556 to 1662. The total number of coins in circulation even after this was more than double of that in 1592. It is not possible in the light of the available data, to explain satisfactorily this fall. The curve should have established whether the import of silver decreased or not, for there is no evidence of re-export of silver on any large scale during this period, and hoarding is not likely, in view of the falling price of silver. It is possible however that the imperial financial policy might have had a part to play in this. Jahangir before his death in 1627 exhausted 6 out of 7 crores of rupees of cash reserves in silver that Akbar had left behind. But Shahjahan, immediately after his accession (1628), sought to reverse this trend and began to build up cash reserves again at the rate of

24. Of course, the number of the coins returning to the mint would be spaced out within this period. Some would wear off earlier than others, and so lose in weight; and the moment their weight fell below the standard, they would be valued only as bullion (I. Habib in *Medieval India Quarterly*, Vol. IV, Nos. 1-2, p. 6).

25. The conversion of *Hijri* and *Ilahi* years into Christian are based on the principles already stated. Where a Christian year happens to correspond to two *Hijri* years, I have halved the number for the two *Hijri* years. The years thus affected are A. D. 1666 and 1699.

FIGURE 4

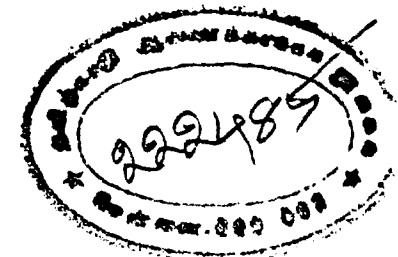
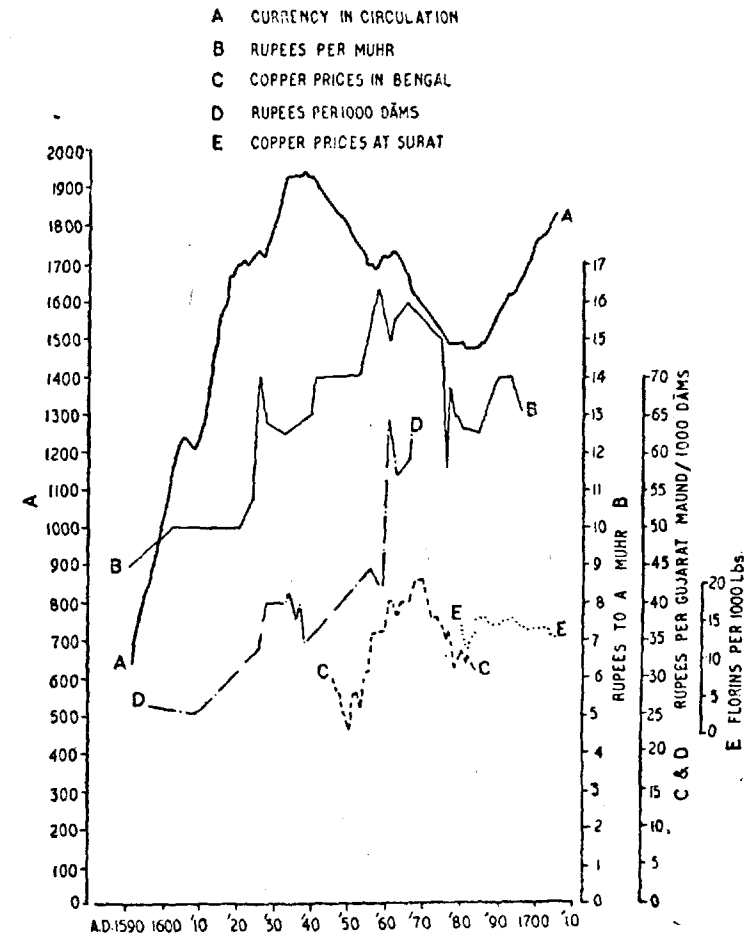


FIGURE 5

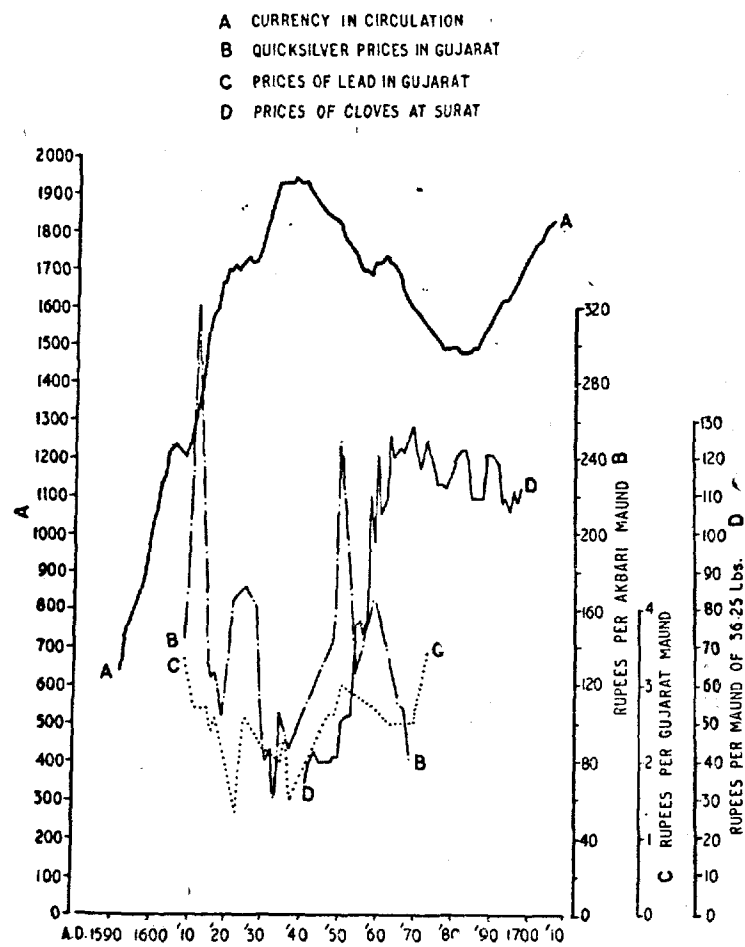
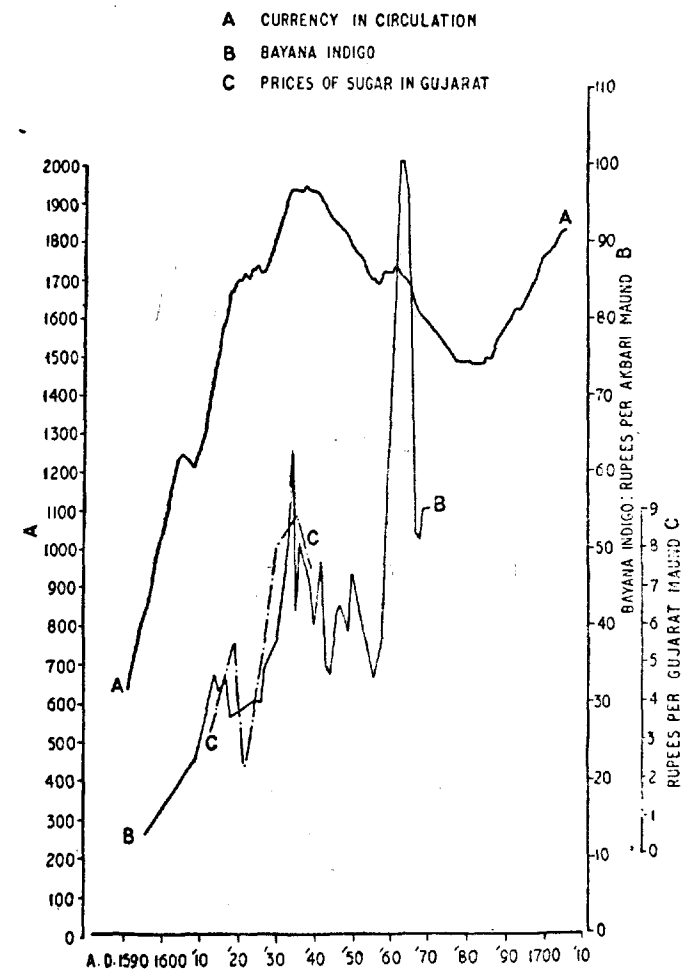


FIGURE 6



5 millions of rupees a year through enlarging the *Khalisa* (areas under direct royal administration) and effecting savings in expenditure.²⁶ Owing to the large amounts involved, this hoarding policy might ultimately have resulted in withdrawing an increasing amount of coins from circulation.

3. The currency in circulation began to rise again from 1685, the ascent continuing steadily until the end of our period (1706). We have already commented on the increase in coinage output during these years, on the lack of correlation with contemporary American export of silver, and on the heavy European exports of bullion to India which nonetheless occurred in this period. Here we may add that the possibility of dishoarding accumulated reserves by Aurangzeb in view of the Rajput war (1679-81) and his long Deccan campaign (1681-1707) may also be taken into consideration.

We may now go on to consider the effects that such a great increase in the currency in circulation, as took place during the first decade of the 17th century, just after the middle and finally towards the close of the century, would have had on the level of prices in the country. We again assume that factors such as the total volume of sales and the velocity of coinage remained more or less stable. Any increase in the currency in circulation should then have led to a rise in prices, keeping in step with the rate of increase in the total quantity of coins in circulation and following possibly with a time-lag. On the other hand when the currency in circulation declined the price curve might either remain stable or decline. Only a large contraction of currency would have the effect of depressing prices. The total amount of coins in 1639 was three times that in 1592. It can hardly be argued that the production in the country kept pace with such an increase, and we must expect therefore that prices must have increased very sharply during this period. On the basis of the considerations set out above we should expect that the decline in the currency in circulation after 1639 would not have had either a depressing or stabilising effect on prices. Finally, a general ascent

26. Amin Qazwini, *Padshahnama*, transcript of the MS in the Raza Library, Rampur, in the Department of History, Aligarh Muslim University, Aligarh, No. 14, p. 423.

in the price-level may be expected for the last two decades of our period.

As has been explained already, we have very little information about the prices of commodities of mass consumption. Such information as we have broadly confirms a great rise in prices during the 17th century.²⁷ Generally speaking, the data are too scrappy and diverse, for a proper corroboration of the currency-in-circulation curve that we have constructed. But the evidence such as it is (in so far, of course, as it is available to me), is here presented.

A table of grain prices given in the *Ain-i-Akhari* (1595), and the records of the Dutch Factory at Agra in 1637-38 and *Ma'asir-i-Almagiri* for the year 1660 is being reproduced below in rupees per *man-i-Shahjahani*.²⁸

	<i>Ain 1595</i>	<i>Agra 1637</i>		<i>Agra 1638</i>		<i>Agra 1669</i>
		<i>Average of monthly prices</i>	<i>March</i>	<i>Average of monthly prices</i>	<i>March</i>	<i>March</i>
Wheat	0.40	—	—	—	—	1.14
Wheat flour	0.50	1.09	1.00	1.69	1.63	—
<i>Sukhdas</i> rice	3.33	—	—	—	—	2.86
Gram	0.27	1.05	1.00	1.70	1.82	0.95
<i>Ghee</i> (Clarified butter)	3.50	8.53	8.46	9.73	8.57	10.00
<i>Mung</i> (Phaseolous radiatus)	0.60	—	—	—	—	—
<i>Moth</i> (Lymantriid)	0.40	1.04	—	1.47	—	—

There can be a number of criticisms of this table, because it is not certain whether the *Ain-i Akbari* prices refer to Agra at all, or that the 1637-38 prices were not affected by adverse weather condi-

27. Cf. I Habib, *The Agrarian System of Mughal India*, pp. 81-89.

28. This table is based on I. Habib, *Agrarian System, & c.*, p. 83, & W. H., Moreland, 'Some Side Lights on Life in Agra, 1637-39', *Journal of U. P. Historical Society*, Vol. III, Part I, Dec. 1923, pp. 147-161.

tions. The Agra prices of 1669 are however distinctly said to be those of a very good harvest. On the whole however the trend is clear and justifies the view that the prices of most of these commodities (wheat, grain and *ghee*) increased by at least three times.

The commodities about which greater details are available are generally either gold or copper, or commodities mentioned in European sources. In either case, the commodities are those which were greatly involved in oversea trade. Since the oversea trade with Europe had increased tremendously during the 17th century, we should have expected the prices of imports to have gone down and the prices of exports to have risen, depending in the latter case upon the share of the total production directed towards the foreign market. The trends in the imports and exports have thus to be studied separately.

In Fig. 4²⁹ an attempt has been made to reconstruct the curve of gold and copper prices based on different sources of information³⁰ and setting these off against the curve showing the total currency in circulation. Gold and copper were both import commodities, yet we find a common tendency towards a marked ascent from around 1595 until 1665, when the peak is reached. Both gold and copper prices have striking similarity with the movements of the currency in circulation curve. In the gold-price curve there is a rise up to 1641; then the curve stabilises (this is the same period when our currency-in-circulation curve starts descending). The gold price rises again and reaches the peak in 1658. Afterwards it inclines towards a fall, reaching the lowest point in 1676. This synchronises with the steady fall in silver currency in circulation as shown by our curve. But it might also be due in part to the influx of gold from Japan.³¹ After 1676, gold-prices underwent fluctuations, possibly

29. Prices of all the commodities given in different units of weights in the sources, have been converted into one of those units.

30. Curves A and B are based on the figures collected by K. Glamann, 'The Dutch East India Company's Trade in Japanese Copper', *The Scandinavian Economic History Review* I, No. 1, 1953, pp. 41-49. The copper prices forming the basis for Curve B are given in florins in the Dutch records. But these are reconversions from rupees at a fixed book-rate of 30 stuivers to the rupee, so that the curve directly represents price-fluctuations in terms of rupees.

Curves 'C' and 'D' are based on the figures given in I. Habib, *Agrarian System of Mughal India*, pp. 380-394.

31. For Japan's 'export boom' in gold during this period, see Glamann, *Dutch Asiatic Trade*, pp. 58, 63.

rising until a sharp fall occurred about the mid-nineties.

The copper-coin price (*dam*: rupee) curve shows a remarkable ascent, from 1609 until 1659-68. This curve stops just at the time when the fall in currency in circulation becomes considerable and would be expected to influence the price movements. The copper (bullion) price rises up to 1671, with a period of stability during 1661-66; and then a decline, at a very steep rate, sets in. The copper bullion price rises again in 1682-87 and then shows comparative stability with however a slight inclination towards a fall.

Three other import commodities, of which data are available in more or less continuous series for certain periods, are lead and quick-silver in Gujarat and cloves at Surat (curves plotted on Fig. 5).³² The data for lead show three big gaps viz. 1618-1622, 1638-46, and 1651-58. There is a distinct downward trend during the earlier period 1609-1623, but afterwards there follows an ascent with great fluctuations. The curve shows comparative stability from 1660 onwards. The fluctuations in the price of quick-silver are remarkable. Its prices too, like that of lead, have a downward tendency, with sharp fluctuations, up to 1636-40. Afterwards, the curve shows a rise, followed by a decline during the years 1650-68. Unfortunately, the curve stops in 1668, and we cannot compare it further with the other two curves of lead and cloves. The great fluctuations in the price curve of quick-silver may have been the result of very large imports by the competing Dutch and English Companies or the result of the cornering of the trade by Indian merchants.³³ The prices of cloves at Surat (beginning 1641 A.D.) show an increase which broadly synchronises, at least in its initial stages, with the

32. Figures for the price curve of quick-silver are collected from *Letters Received*, Vol. I, 32, 235, 305, Vol. II, 180-81, 193-263; Vol. III, 9, 86; Vol. IV, 296; Vol. V, 106, 135; Vol. VI, 160, 249-50. *Supplementary Calendar*, 56, 58, 62, 101, 110. *English Factories in India*, ed. Foster 1618-21, 55; 1622-23, 162; 1624-29, 64, 92, 242; 1630-33, 89, 103, 180, 206, 213, 275; 1634-36, 23, 82, 143, 205; 1646-50, 188, 249, 282; 1651-54, 252; 1655-60, 199; 1661-64, 210, 381; 1665-67, 31; 1668-69, 3, 24. *Travels of Peter Mundy* Vol. II, 147, 148, 149, 153. Figures for the price curve of cloves have been taken from K. Glamann, *Dutch Asiatic Trade 1640-1740*, pp. 301-2.

33. Figures for the price curve of lead have been taken from *Letters Received*, Vol. I, 32, 33; Vol. II, 193; Vol. III, 8, 9, 32, 44; Vol. IV, 296-336; Vol. VI, 159. *Supplementary Calendar* ed. Foster, pp. 68, 71, 110. *English Factories in India*, ed. Foster, 1622-23, 334; 1630-33, 32; 1634-36, 134, 205, 218; 1637-41, 98; 1646-50, 84, 206, 282; 1655-60, 199; 1661-64, 210; 1668-69, 3, 24, 190, 199; 1670-77 (Western Presidency) 283.

last and final rise in the quick-silver price curve. The price of cloves seems to have reached its high points during the sixties, whereafter it tended to stabilise with a very slight tendency towards decline. But in the trade in cloves too there was a great deal of disturbance due to the monopolising measures of the Dutch Company. However, the price curves of lead and cloves have great similarity during the period starting from 1637; and all the three curves show considerable correspondence in their decline and rise during the period 1630-50. On the whole, the price curves of these three commodities follow patterns which fit neither that of the currency-in-circulation curve nor of the gold and copper price-curves.

The export commodities for which prices are available are indigo and sugar. In Fig. 6 the price-curve of the Bayana indigo, the best variety, has been plotted, with its initial point in 1595 and its final in 1670. Sugar prices available are those reported for the ordinary powdered variety, mainly from Ahmadabad and Surat during the period 1613-1639.³⁴

The behaviour of the price of the Bayana indigo shown by the curve is extremely interesting. There is a steady and proportionately very rapid rise beginning after 1595 and continuing right till 1634, the price having gone up by nearly five times. While the increase in European demand might have played a part in this rise, it is difficult to attribute this ascent to that factor alone. After 1634, there is a decline so that ultimately the price stabilized around a figure roughly three times the price of 1595. This may well be because of the new competition from the indigo plantations of the West Indies which resulted in the falling off of the European demand. But in part, it may also reflect the decline in the money in circulation with which, as can be seen from our diagram, the decline in price largely synchronises. After 1655 there is another great rise in the price of indigo, the apex being reached in 1663 and

34. For the curve of Bayana indigo, see the table of prices in I. Habib, *The Agrarian System of Mughal India*, pp. 86-88. For certain additional data not cited there: *Supplementary Calendar* ed. W. Foster, pp. 53-54, 65; *English Factories*, ed. Foster, 1630-33, p. 328.

For curve of Gujarat sugar see *Letters Received by the East India Company from its servants in the East*, Vol. I, pp. 305-6. *English Factories*, 1618-21, 102; 1622-23, 109; 1624-29, 221; 1630-33, 52, 61; 1634-36, 42, 177; 1637-41, 192. This curve shows half of the actual figures.

1664. This again corresponds to the increase in the currency in circulation during the period 1658-63, although drought in this case might have been a contributory factor for the increase in price. The sharp decline in the late sixties can be attributed to better crops as well as to the cumulative effects of decline in currency-in-circulation which began again in 1664.

The Gujarat sugar curve shows a remarkable correspondence with the Bayana indigo curve although the period it covers is much shorter: A general rise is unmistakable throughout the period 1613-1635 with a slight decline in or before 1639. It can hardly be thought that sugar was produced extensively for the foreign market; and therefore its price could hardly have been determined by the fluctuations in foreign demand. The rise in the price of sugar, a rise by which the price more than doubled in a matter of ten years, between 1613-23, could only have been the result of the great increase in currency in circulation during this period.

As explained at the beginning of the paper, my chief concern has been to test whether a rather simple device, namely, the tabulation of the surviving coins year-wise will not give us what would in effect be a currency output curve, and then a currency-in-circulation curve for northern India during the Mughal period. The broad consistency of the curves of total coins in individual collections has shown that the histogram of five yearly totals of the rupees catalogued may be accepted as broadly representing the histogram of five-yearly output of rupees from North Indian mints. Our comparison of this histogram with the histogram of the import of American treasure into Spain has revealed a surprising degree of correspondence, which suggests very strongly that the silver influx into Europe was duly extended to India during the last years of the 16th and earlier part of the 17th century.

Having converted, on the basis of certain hypotheses, the currency output curve into a currency-in-circulation curve, we have then tried to establish whether there is some correlation between this and the price-curves of various commodities. Naturally complete consistency or conformity cannot be looked for because various factors such as the harvests, monopolisation, sharp fluctuations in production and imports (in the case of commodities of limited consumption, in particular), expansion or contraction in monetization,

etc., would have played a very great role in determining the price curve of each individual commodity ; and in many cases such factors were either very significant or remain unknown to us. But when we find that prices of important commodities (both imports and exports) rise markedly during the first half of the century, largely in the same manner as the total amount of rupee-coins in circulation, we may be allowed to infer that the price changes were largely influenced by the influx of silver from Europe. But final judgement must, of course, be postponed until the time that the various major lacunae in our information are filled, and the economic history of the 17th century is placed on a surer foundation.

TABLE I
NUMBER OF RUPEE (AND FRACTIONAL) COINS CATALOGUED
(ANNUAL TOTALS)

<i>Year</i>	<i>No. of coins</i>	<i>Year</i>	<i>No. of coins</i>
<i>Akbar</i>			
AH. 963	3-1/2	987	32-1/2
964	13	988	25
965	10	989	20
966	6	990	10
967	14	991	7
968	6	992	6
969	8-1/2	993	17
970	16	994	7
971	12	995	15
972	7	996	18
973	11	997	18
974	7	998	40-1/2
975	17	999	26
976	9	1000	55
977	15-1/2	38	73
978	41-1/2	39	76-1/2
979	12	40	45
980	17	41	50-1/2
981	14-1/2	42	62-1/2
982	12	43	63-1/2
983	19	44	67
984	31	45	60
985	32	46	83
986	28	47	68

TABLE 1 (contd.)

Year	No. of coins	Year	No. of coins
		17	52-1/2
		18	35-1/2
48	77-3/4	19	62
49	75	20	57
50	73-1/2	21	31-1/2
		22	79-3/4
<i>Jahangir</i>		<i>Shahjahan</i>	
<i>Ilahi</i> 1	39	<i>Ilahi</i> 1	39
2	29-1/2	2	90
3	14	3	82
4	21	4	94
5	49-1/2	5	83
6	62	6	73-1/2
7	104	7	63-1/2
8	100	8	48-1/2
9	89-1/2	9	44
10	82	10	56
11	106		
12	69		
13	107-1/2	AH 1048	45-1/2
14	53	1049	49
15	64-1/2	1050	34-3/4
16	45	1051	33

TABLE 1 (contd.)

Year	No. of coins	Year	No. of coins
1052	38	1074	26
1053	28-1/2	1075	26
1054	41-1/2	1076-1077	27-34
1055	35-1/2	1078	24
1056	35-1/2	1079	25
1057	41-1/2	1080	20-1/2
1058	34-1/2	1081	31
1059	31	1082	32
1060	22	1083	28
1061	28	1084	20
1062	35	1085	26
1063	19-1/2	1086	22
1064	36	1087	24
1065	20	1088	34
1066	45	1089	36
1067	36	1090	38-1/2
1068	58	1091	33-1/2
1069	53	1092	28
		1093	41-1/2
		1094	33
		<i>Aurangzeb</i>	
		1095	36-1/2
		1096	49
1070	39	1097	49
1071	47-1/2	1098	54
1072	52	1099	66
1073	36	1100	54

TABLE I (contd.)

Year	No. of coins	Year	No. of coins
1101	55	1111	89
1102	63	1112	55-1/2
1103	55	1113	49
1104	53	1114	51
1105	43	1115	57-1/2
1106	63-1/2	1116	59
1107	55	1117	69
1108	63	1118	57-1/2
1109	61	1119	9
1110	43		

TABLE II

ANNUAL BULLION EXPORTS OF THE ENGLISH EAST INDIA COMPANY

Years	£	References
1601-05*	16,451	K. N. Chaudhuri, <i>ibid.</i> , p. 115
1606-10	17,260	"
1611-15	15,667	"
1616-20	82,515	"
1621-25*	47,740	"
1626-30*	106,750	"
1631-35*	63,100	"
1636-40*	31,333	"
1666-70*	166,152	S. A. Khan, <i>ibid.</i> , p. 168 ; figures from 1667-8 to 1670-71.
1671-75*	144,140	S. A. Khan, <i>ibid.</i> , p. 168 ; figures from 1671-72 to 1673-74 ; Macpherson, <i>ibid.</i> , p. 134.
1676-80	400,000	S. A. Khan, <i>ibid.</i> , p. 269
1681-85	400,000	"
1686-90*	400,000 ?	" Figure only for the year 1691.
1696-1700*	800,000	S. A. Khan, <i>ibid.</i> , p. 270.
1701-1705*	800,000	"

*Information is not available for the whole period of five years and the annual average is based only on information or estimate for a part of the period.

POSTSCRIPT

Since compiling the above I have come across the extremely interesting data about the English East India Company's exports of gold and silver to the East during the latter part of the 17th century, set out in K.N. Chaudhuri's recent paper, 'Treasure and Trade Balances : The East India Company's Export Trade, 1660-1720; in the *Economic History Review*; second series, Vol. XXI, No. 3, 1968.

The information given by Chaudhuri is not only at variance with that given in S.A. Khan, *East India Trade in the Seventeenth Century*, but is also better for my purpose since it gives the totals of silver exports separately.

I give below a comparative table of (A) the East India Company's silver exports (based on Chaudhuri's statistics) and (B) the Mughal silver currency output, based on the numbers of coins preserved. The figures for the five years 1661-65 have been used as base, = 100.

Years	A	B
1661-65	100	100
1666-70	124	88
1671-75	168	68
1676-80	457	90
1681-85	630	102
1686-90	71*	151
1691-95	330	150
1696-1700	750	204
1701-1705	186*	154

* Incomplete figures.

It will be seen that the Mughal currency output does not increase in the same proportion as the total value of East India Company's silver export. But the dramatic rise in these exports in 1676-80 and that again in 1696-1700 are immediately reflected in distinct upward swings in Mughal currency output during the same periods.

BOOK REVIEWS

S. Gopal : *British Policy in India, 1858-1905* (Cambridge University Press, 1965, xii + 424, biblio., 70 sh.)

This is a superbly well-written book on British imperial policy in India between 1858 and 1905. Dr. Gopal's main purpose is to examine, for this half century, how far the administrative, constitutional, and external policies of the government of India were moulded by the personalities and policies of successive secretaries of state and viceroys. It is a large canvas that he is painting, and he has on the whole given a well-balanced picture of the major trends in the internal and external policies of the Indian government.

His strongest point is his ability to sketch the characters of the viceroys whose private papers he has read and reflected on. His estimates of Mayo, Lytton, Ripon, Dufferin, and, above all, Curzon are among the best character-sketches by a historian that I have read. This has enabled him to show when a strong personality at the top was able to influence policy-making, and give a lead to the bureaucracy, and when, on the other hand, officialdom ruled supreme. This last situation was reached, in the author's opinion, in the time of the viceroyalty of Lord Elgin (1894-98).

Both the strength and the weakness of the book lies in its excessive reliance on the private papers of secretaries of state and viceroys, especially their demi-official correspondence with each other. These are undoubtedly valuable in assessing character, gauging motives, and probing the strength of behind-the-scene pressures. Yet, unless it is accompanied by an equally careful reading of at least the main 'A' proceeding files of the Indian government and the corresponding files of the India Office, a clear understanding might not always be possible of developments in certain fields, especially those of economic policy, administrative development, and external relations. Sometimes notings and demi-official letters kept with a government file are more useful as sources

than what the viceroy chose to write in a 'private letter' to the secretary of state.

Two examples will be given of this. In writing about the Assam labour recruitment Act (Act VI of 1901), Dr. Gopal writes, citing a letter of Curzon to Brodrick as the source, "To relieve pressure on the land, emigration of labour to plantation in Assam was facilitated by legislation raising the minimum level of contract wages and prohibiting unlicensed recruiting!" (p. 258). This may easily give a misleading impression as to the main purpose of this Act. The report of the Assam labour enquiry committee and related files in the Emigration department show that it was not concerned with relieving pressure on land, but to check the many evils in the system of direct recruitment by planters which had been permitted by an Act of 1882. By the turn of the century the surplus populations of U. P. and Bihar were attracted to the industrial belt around Calcutta in preference to Assam, and consequently the tea planters were using forcible and fraudulent methods of recruitment, which needed to be ended.

Similarly, in writing about the Factory Act of 1891 (p. 214 f), the almost complete reliance only on the Lansdowne-Cross correspondence has led the author to make one or two debatable observations. The present reviewer, who has examined the proceedings of the legislative and judicial departments in connexion with this act as well as the relevant portions of the Lansdowne papers, would agree that the Indian government was prompted by humanitarian considerations rather than Lancashire pressure which it fought vigorously. But there is evidence of Lancashire pressure on Cross and Gorst, and we wish that, with the British records at his disposal, the author had gone more fully into the question of how far this influenced the repeated epistles that these two sent to India. It is also rather difficult to accept the author's statement about the Factory Legislation Commission of 1890: "But the report of this Commission was disappointing and shed little light on the problem" (p. 214). This reads more like a repetition of Cross's views than an independent assessment of the report.

In a work which is concerned primarily with the personalities and policies of successive viceroys and secretaries of state, one theme could be expected to be developed fully, how far British policy in

India was influenced significantly by the divergent approaches of the Liberal and Conservative parties in Britain. Dr. Gopal has tackled this question in many places. When one starts reading the book and looks at the general pattern of chapterization ('The Conservative Adventure, The Liberal Experiment, Return to Caution' etc), one's appetite is whetted, and one looks forward to a rounded development of this theme, especially as the author is probably the only Indian historian whose works have shown a sure grasp of contemporary British history. But this appetite is not satisfied for the task is left unfinished.

In a chapter entitled, 'The Liberal Experiment' he discusses the attitudes of Ripon and Dufferin to constitutional questions and brings out the limitations of the essentially dilettante approach of Dufferin. We would, however, like to know how far the coming to power of Lord Salisbury's Conservative government in 1886 contributed towards frustrating whatever latter-day enthusiasm for the educated Indian nationalist Dufferin developed before he left in 1888 (p. 173 f). The author has lucidly described the way Salisbury and Cross obstructed Lansdowne's mild proposals for the reforms of the Council (pp. 181-86), and shown Lansdowne's propensity to revert to traditional paternalist lines of thinking at the slightest provocation (p. 190). We would have liked, however, a slightly fuller treatment of how far Gladstone's fourth ministry, between 1892 and 1894, tried to influence Lansdowne in a liberal direction, and how far the latter was amenable to it.

About one half of the book is devoted to a study of the external policy of the government of India, and the way it was influenced by successive governments in Britain. Within the limits imposed by the size of the book these pages give a clear picture of forty-seven years of diplomacy. A general criticism of the section would be that the author could easily have used his researches as a sounding board to test alternative hypotheses about imperial diplomacy, which in recent years have started a controversy in academic circles. Even if a definitive answer was not possible in the absence of a sufficient number of monographs on different areas, some general guidelines on the relative uses of Hobson-Lenin and Gallagher-Fieldhouse hypotheses on imperialism for British Indian

foreign policy would have made the book the precursor of a number of monographs.

There are two specific criticisms which come to my mind with regard to the eighteen seventies and the turn of the century. On pp. 71-77 he describes the north-western policy of Mayo and Northbrook, and argues at some length that the cautious policies of these two viceroys were sought to be modified under the "new conservatism" (p. 74) of the government of Disraeli in 1874, of which Lord Salisbury was the secretary of state for India. How far it differed from the policy of the previous Liberal government (1868-73), and how far that government's policy had influenced Mayo and Northbrook or been in turn influenced by the latter—these are questions that surely should have been developed. This has not been done. The excessive concentration on the private correspondence between the Viceroy and the Secretary of State has led the author to ignore the findings of Professor A. P. Thornton's interesting paper on this period, which puts the despatch of the Forsyth mission by Mayo to Russia in late 1869 in the wider perspective of a softening of Russo-British relations since February 1869; Dr. Gopal's expression, "the Viceroy, acting almost as the head of an independent government, sent his own emissary" is liable to be misunderstood. Those of us who have examined the Foreign department proceedings of this period would certainly agree with Dr. Gopal in his judgment that Mayo and Northbrook were against military adventures in Afghanistan or further north. However, these records also show, especially when read in conjunction with the Gladstone-Granville correspondence, that the Liberal government tried hard in 1872-73 to negotiate a demarcation of spheres of influence with the Russians—a fact which Dr. Gopal has not mentioned. Nor has he mentioned the Russian attack on Khiva in the summer 1873 which, coming after an understanding had appeared to have been reached between Shuvalov and Granville, made it initially difficult for the Home government to reopen negotiations. These are worth mentioning, otherwise one would get the impression by reading Dr. Gopal's account of Northbrook's policy in late 1873 and early 1874, that Disraeli's government simply continued the previous government's policy of not talking to the Russians (p. 72 f). In fact, in December 1873 Gladstone helped Granville in

drafting a new diplomatic note to Russia on the Central Asian question. (Gladstone to Granville, 14th Dec. 1873, quoted in A. Ramm (ed.), *Political Correspondence of Mr Gladstone and Lord Granville*, vol. II (Camden Society, 3rd series, LXXXI) (London 1952); this became the basis of Granville to Loftus, 7 Jan 1874 National Archives of India, Foreign-Secret, Apr 1874, 180-256, no. 148).

On p. 230 (and on p. 376, notes 35-37) Dr. Gopal has described Curzon's Persian policy mainly through Curzon's own eyes, and has done Lord Salisbury slightly less than justice. It is true that Curzon's pleadings for a vigorous anti-Russian policy in Persia were taken more notice of when Lansdowne succeeded Salisbury as foreign secretary, and that Lord Salisbury admitted his inability to pursue a vigorous financial diplomacy. But there was more continuity in British policy in Persia before and after 1901 than is apparent. On the same day that Salisbury wrote to Currie the letter that Dr. Gopal quotes on p. 376, he also wrote to Northcote, expressing his keenness to maintain security in southern Persia and supporting the idea of a railway from Quetta to Seistan (Salisbury to Northcote, 8 June 1900, quoted in R. L. Greave's work).

These criticisms do not in any way detract from the merit of a book which will have to be read by anyone interested in the study of modern Indian history in the late nineteenth century, or in British imperial policy in general. Considering what a big task Dr. Gopal set himself, he has achieved a large measure of success.

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PARTHA SARATHI GUPTA

Wolfram Eberhard : *Settlement and Social Change in Asia, Collected Papers*, Volume I, Hongkong University Press, 1967.

This is the first of six volumes which Professor Eberhard proposes to bring forth presented collections of papers which he wrote during thirty years. The collection is selected excluding papers outdated by later research and serving the central theme, 'Settlement and Social Change in Asia'. And therefore, this volume, as also the proposed ones is planned to render it the identity of a book in its own right.

The papers are the result of long years of research in China, Japan, Korea, Pakistan, Afghanistan and Turkey. As the author notes, the papers scattered widely in various publications and some were in German and Turkish. The effort to publish selections in book form in English is certainly commendable. Of the twenty-four chapters, eight are published here for the first time and others have undergone revision for this volume.

Chapter I, 'Land Tenure in the Ancient Orient' examines the basic concepts of 'land' and 'tenure' and attempts to identify the more important of factors which determine the pattern of land tenure a society accepts. With the perspective that land tenure patterns represent solutions to social problems, there is a vivid support to the thinking that rejects the idea of a unified, unilinear theory of the development of land tenure all over the world.

The second chapter shows that Chinese civilization was a synthesis of several cultures of different societies and even of different races. The dynamic nature of this synthesis, continuing to this day, involving migrations from central China and amalgamations at new centres is the problem handled with care. The chapter is an attempt to define the present position of our knowledge of this field and to indicate the possible directions of future research. Further, as the author notes, "land tenure and settlement is not necessarily a rural phenomenon, for a society can spread by founding cities, and this was another feature in the expansion of China's population in each new region." Chapter 2 thus gives in outline the development of the Chinese city with more details in Chapter 4.

Parts I and II are covered by the first two chapters and in Part III are presented three chapters under the theme "Family, City and Industry". The chapters on family surveys the Chinese family over

centuries and deals with two aspects—changes in the form of the Chinese family and changes in the character of the family as far as they result from changes in fertility. Employing a functional approach it is revealed that there is a wealth of untapped material on which a functional approach can fruitfully be based. Such material consists of 'unofficial' documents such as fragments of census lists or land registers, or family genealogies printed privately, and as well, general histories as sociological sources. To be methodologically sound one has to manouvre very skilfully to study documentary evidence as to how individuals in fact behaved. Often, one can get penetrating insights to re-interpret documents when more is known about the contemporary family. It is shown how this is the case with the Chinese family which poses to the researcher an urgent need for reliable data on the interaction within the family. Eberhard's methodological contribution through this chapter is bound to benefit students of Indian family as well.

The study of the structure of the pre-industrial Chinese city brings out significant issues, and valuable hypotheses. There is paucity of historical data but with available material an attempt is made to perceive deeper into the Chinese city. The role of merchant middle class in developing the city which in turn gave rise to the industrial society in Europe is an accepted finding today. But how far was it applicable to China? The far eastern city historically is said to have differed from the European city in several critical ways mainly because the former had no 'burgher' or free middle class. The author doubts the validity of this theory and points to directions in which the Chinese city deserves to be studied. For, the researcher has to answer what was the function of a city in China and why did urbanization not generate an industrial era in spite of certain favourable conditions. From an analytical understanding of the career of Weng Ko, an early industrialist, we get glimpses of the stark realities which conditioned the prosperity of entrepreneurs. The author in this context presents: "In industrial development it is observed that enterprise could not flourish for as long as entrepreneurs had to devote so much energy and capital to the protection of their business. Wang Ko's fate thus exemplifies the conditions under which private industry operated in the XII century".

Part IV deals with problems of settlement in mediaeval China in four chapters. It provides "a microscopic view of the stability and

mobility of a population" in a small border area of Tunhuang during mediaeval times. The Tunhuang material (Chapter 6) is from a border area with towns and settlements. The locale provides a rich field for study of immigrants and their development over 1100 years. A rich source of Chinese texts published and a promising bulk of still unpublished material have contributed to the value of this enquiry. In the context of our insignificantly little knowledge about mediaeval or early cities of the orient, it is rewarding that this part of the book sets several guidelines for enquiry and methodological perspectives to handle historical documents. Among the problems posed by the author are those which concern scholars of Indian history as well. For instance, as he notes, one of the aims of the study is "to see which types of general sociological questions can be posed and what results can be expected... Max Weber attempted a preliminary classification of cities according to their function; so far no attempt has been made to test his hypothesis in relation to the Chinese, Indian or Near Eastern city of the past or the present... Is Max Weber's classification of the Chinese city as a centre of bureaucratic administration, essentially without production, correct? If so, is it correct for all parts of China? And since when?... Where does the city population come from?"

Against this background Part V has assembled material on a few problems under the general theme "Settlement and Development in Modern South China and Korea". In this part the author attempts to suggest a preliminary answer to questions such as: "Did a kind of patriciate exist in China or Korean Towns? Was there historically some mobility in the cities?... What are the population changes in such towns? What is the role of religion there?" The seven chapters contributing to the main theme of this part of the book are: Social Mobility and Migration of South Chinese Families, Labour Mobility in Taiwan, Social Mobility among Businessmen in a Taiwanese Town, Business Activities of a Small Chinese Merchant, Family Planning in a Taiwanese Town, Social Mobility of Businessmen in a small Korean Town, Economic Activities of a Chinese Temple in California. Analysing intergenerational mobility Eberhard finds points of interest and theoretical significance. For instance it is shown that (a) the gentry families belonging to the upper stratum of traditional Chinese society under-

went downward mobility by taking up farming or business, (b) there was, contrary to the general trend of scholarly opinion on the problem, (at least since the Ming period in some areas) a real bourgeois merchant class closely connected with the gentry but developing its own forms of culture, and (c) the Chinese society before the twentieth century was not a closed society, particularly from the Sung period. The chapter on labour mobility in Taiwan handles a sample of 2000 cases of applicants served by the employment office up to May 1960 and reveals the impressive occupational stability and yet the functioning mobility of the workers. From the study of social mobility of businessmen in a Taiwan town emerges six general hypotheses which, as the author notes, may be worthy of testing. These relate to the questions posed at the beginning of this part, and appear to be rewarding for studies of the same general problems in several other Asiatic countries.

The seven chapters in this part have surveyed a wide span of situations, historical and contemporary, of valuable sociological interest. For instance, the study, 'The Business Activities of a Small Chinese Merchant,' leads us to discover that analysis of account books of merchants holds promise for economists and sociologists. In the study tentative suggestions emerge from the analysis of one such book covering half a year and these lead to some penetrating insights. It is fascinating to read: "From the books we can often distinguish habits of certain customers; some smoke only a certain brand of cigarettes; others prefer a certain brand of wine; some buy only fish. Each of them had only limited transactions with this shop—another possible indication of their low status (Table 3)... Our shop sold traditional goods almost exclusively, just as shops centuries before had done. In some ways Chu-fa might be representative of similar shops on the Mainland of China in the XIX century or even earlier".

Part VI has the theme 'Settlement and Development in the Near East'. The area covered are South Eastern and Southern Turkey, West Pakistan and Afghanistan. Studies on Turkey comprise three chapters—'Nomads and Farmers in South-Eastern Turkey; Problems of Settlement', 'Types of Settlement in South-Eastern Turkey', and 'Changes in Leading Families in Southern Turkey'. There are three studies of West Pakistan—'Colony Villages in the

Panjab', 'Studies on Pakistan's Social and Economic Condition, A Bibliographical Note', and 'Modern Tendencies of Islam in Pakistan'. Afghanistan is covered by the two chapters: 'Afghanistan's Young Elite' and 'Labour Sources for Industrialisation: The case of Afghanistan'.

In Part VI, as the author notes, the scene changes, but not the problem. This part keeps in major focus the role of the cattle breeding nomadic tribes of the Near East in early times and also in various instances of their recent settlement.

Several problems in the field of settlement studies come for meticulous attention in these chapters of Part VI. The trends of change in the type and form of settlements corresponding to aspects of social structure and social change up to the present times are illuminated in the course of coverage of the various areas. Each study also yields its own distinct situational finding or guidance bearing on the theoretical issues of the subjects discussed. Thus for instance, in the study on sources of labour for industrialisation in Afghanistan the author notes: "Under such complex conditions it is inadmissible to lump together secondary and tertiary processes of industrialisation in one theory and to make predictions on the basis of a theory of industrialisation which presumes only *one* process of industrialisation. For the time being each situation of industrialisation has to be studied separately in all its details."

Although each part of the book is a mounting achievement, the reviewer feels tempted to be critical of the explanations about the physical pattern of the West Pakistan villages. The perspective employed to comprehend the pattern should have been reinforced with enquiry at a more micro level. This probably is the lacking feature in some of the descriptions of villages elsewhere in other chapters. The closed village (the nucleated type) is a stabilised form through centuries of life and living. Houses look inward (an 'introvert' character) not only around the periphery of the residential site but also at the level of sectors occupied by social groupings who are differentiated by religion, caste and lineage. Further, generally, a dwelling unit for each household is only a vague residential setting whether the households are joint families or elementary ones. It is usually not possible to make out the boundary of the dwelling unit of each household without discovering that each house is a 'composite' one (at least potentially if not in objective

reality at the time of enquiry) housing a few closely related households which use in common several spaces such as courtyard front-yard, cattle shed and fodder store. Such a composite house, in contiguity or proximity with others, merge into the wider residential setting which can be identified as the residential 'fort' of a caste or segment of a lineage. The bulk of prescriptive and proscriptive norms of interpersonal relations based on sex, age, kinship and caste has contributed much to the continuity of this pattern in spite of influences working to effect residential mobility or dispersal of such households. In the course of a study of two villages in Rajasthan and Delhi the reviewer found that the relation between aspects of social structure and the spatial structure of residential groupings need to be explored in detail on the lines indicated here to explain the detailed character of nucleation and the reluctance of farmers to accept a shift to farmstead houses.* Departure from this clustered or closed type is reported in Eberhard's account of colony villages in the Panjab. How far it is functionally a real shift can be assessed only after a long period of time. Eberhard reports about different kinds of residential situations in his study of villages in West Pakistan. Each situation appears to be worthy of exploring into more details as regards the spatial structure of the residential area in its relation to the social structure. And in such an enquiry one has to identify the social meanings attached to spaces and physical structures of different category in the residential area of the village. It is possible that households which break away from the tradition to form individual dispersed houses breed up in course of time a closed hamlet of several households of near kin. The trends in residential shifts or expansion in North Indian villages appear to support this view. The departure from tradition is to gain land, or residential site, or loans and subsidies for agricultural work or for building a house.

One wishes that the introduction to the book had been longer and more guiding to keep the less painstaking reader to appreciate how the theme and the general problems get handled in the various parts

*K. R. Unni, "Rural House Types"—(Social perspectives for the study of rural house types in the nucleated Indian village), *Urban and Rural Planning Thought*, Vol. VIII, Nos. 1-2, 1965, Delhi.

and chapters. A guided readership is not covetable for books of such academic value. However, in the context obtaining in most of the developing Asiatic countries the importance of English language is dwindling, and for a wider intellectual appreciation of a book in English the author will have to say how his book has to be read and comprehended. There are obvious limitations in performing such a task but it will be rewarding to evolve an academically sound manner in which the task can be accomplished.

There are 57 photographs in the volume, and a good number of maps and sumptuous use of tables make the textual coverage impressive. Each chapter is followed by copious notes and extensive bibliographic references. Several of the chapters are supplemented with more than one annexe. The textual part covers 438 pages and is followed by an appendix which presents bibliography of Professor Eberhard's work during 1931-1965 (pp. 439-463), and an index section for authors' names and subject matter (pp. 465-492).

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India : Studies in Social and Political Development 1947-1967.
Edited by A. Appadorai. Asia Publishing House, Bombay, 1968.
xvi + 342 pages, Rs. 32.

The volume under review is a *festschrift* which was presented to Pandit Hriday Nath Kunzru on his eightieth birthday in 1967. The theme of the essays—social and political development—obviously suggested itself in view of the varied interests of Pandit Kunzru.

A *festschrift* is always difficult to assemble and edit, and to review. For the editor it is a difficult task because he has to ensure a uniformly high quality of contribution in areas of specialization outside his own. Reviewers suffer from the same handicap, though they do not have to pass judgment on contributions which they feel incompetent to assess. Unfortunately for the present reviewer, the

weakest part of the volume under review is that dealing with his area of interest, viz. social problems.

The volume consists of 15 essays, 4 devoted to social problems, 5 to economic growth and political development, and 5 more to external relations. The last contribution is a detailed bibliography (38 pages) on the principal theme of the volume.

The best part of the book would seem to that dealing with economic growth and political development. It contains scholarly essays by the distinguished economists—P. N. Dhar (achievements and failures of the Indian economy), P. S. Lokanathan (foreign aid and economic development) and B. N. Ganguli (devaluation). M. N. Kaul, the knowledgeable first secretary of the Lok Sabha, writes on the adaptation of parliamentary procedure to meet present-day needs, and Major-General D. Som Dutt contributes an authoritative discussion of the defence policy of India.

Former ambassadors—M. S. Mehta (India's foreign policy) and K. P. S. Menon (Indo-Soviet relations)—open the section on external relations. Both contributions are descriptive essays and do not seem to offer much. Sisir Gupta's 'some problems of Asian security' and M. S. Rajan's 'the future of the Commonwealth'—are more analytical contributions. Professor P. C. Chakravarti writes on Sino-Indian relations—a subject on which he has published two books.

Going back to the first section on social problems, it opens with two very weak papers. S. R. Venkataraman's 'social development in India 1947-1966 : a review of social legislation' is simply a catalogue which lists various pieces of social legislation. The last of these that the author mentions is the Indian Cinematograph Act of 1952. He admonishes that stricter censorship of 'films' is called for as 'certain shots and scenes (are) likely to corrupt young and impressionistic minds'. This advice toward the end comes as a surprise because the earlier pages contain hardly any discussion. The article, however, ends with a completely irrelevant comment on the desirability of 'preparing' tribal communities before applying to them laws meant for Hindus.

Lakshmi Mazumdar tries her hand at nothing short of a 'history of Indian scouting', complete with some important documents, in 39 pages. Though sketchy it is an informative piece and mentions Pandit Kunzru's association with the movement.

With M. S. Gore's 'some problems of educated youth in India' we come to more serious writing. Gore's essay is not based on the findings of any research project but could very well become the basis for one. He draws attention to the fact that 'The youth in modern Indian society are ... called upon to make three major choices, which has a significance much beyond the period of youth—the choice of education, of occupation, and of marriage'. He speaks of the consequent strains. The paper thus touches upon an area of great importance. It, however, lacks the carefulness and precision one associates with Dr. Gore's work. Thus, he seems to suggest (on p. 77) that unemployed bachelors fail to attain 'adult social status'.

K. G. Saiyidain writes from vast experience and with a liberal, humanistic outlook on 'Indian universities and higher education'. But he tries to deal with too many topics—student admissions, staff appointments, service conditions, research facilities, teaching methods, language problem, examinations, etc.—with the result that not one of them is discussed at reasonable length. His essay reads more like the outline of a larger work than a shorter piece complete in itself.

The bibliography is useful, but the absence of an index is to be regretted.

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Dharm Narain : *The Impact of Price Movements on Areas Under Selected Crops in India 1900-39* (Cambridge University Press, 1965, 234 pp.)

One of the questions of major policy significance discussed in the early years of economic planning in India was whether the peasants would respond to the price stimuli in the same way as is expected of the 'profit-maximizing' entrepreneurs. For, if the farmers' production decisions are influenced by custom and tradition rather than by considerations of economic gain, then prices and other economic incentives would fail to serve as tools for economic planning in

dealing with this vast sector. Dr. Dharm Narain's work is primarily designed to provide answers to this question through a study of farmers' production decisions in face of changing prices of crops, variations in rainfall and yields.

He investigates the behaviour of areas planted to six principal crops, e.g. rice, wheat, cotton, jute, groundnut and sugarcane in 'British India' over a period of 40 years ending 1939. He examines the relationship between the movements in crop areas and in relative prices, rainfall and yields. The study lends support to his hypothesis that the Indian farmer responds significantly and positively to price changes. The evidence in support of this hypothesis is pervasive in the case of cash crops where price seems to emerge as a decisive factor in the allocation of areas. In the case of cotton, the data show the Indian farmer to be as profit-motivated as his counter-part in the United States. In the case of foodgrains, rainfall is found to influence acreage allocations to the same striking extent as prices in the case of cash crops. This too reveals the Indian farmer to be highly sensitive to the considerations of economic gain, as the variations in rainfall cause significant variations in the yields of foodcrops. Even in the case of foodgrains the impact of price movements on areas was significant wherever the foodcrops concerned were found to compete with cash crops for area rather than with rival foodgrains. Long-term factors such as the supply of irrigation water and the technological changes resulting in improvements in yields per acre were also found to be significant in influencing the production decisions. There is, therefore, little basis to fear that the Indian farmer would be insensitive to profit stimuli or that his economic decisions would be irrational.

Apart from these conclusive answers to the interesting theoretical questions of policy significance, Dr. Narain's book provides several insights into the agricultural economy of India, especially its history in the first half of this century. The book draws a wealth of information from innumerable original sources to portray the shifting fortunes of agriculture over this period which should interest the economic geographer as much as the economic historian. The data on crop areas, prices, rainfall and yields collected with great care and patience and provided in the statistical appendix running into as many as 65 pages will constitute valuable material for further