MISCELLANEA

SOME MARGINAL REMARKS ON ANCIENT TECHNOLOGY

A review of R. J. Forbes, *Studies in Ancient Technology*, vol. I-VI, turned out to yield so many augmentations of the material without definitely criticizing the work in question that it seemed justified to recast it as an article with this title. The title of the series, however, seems to demand some justification of a review of these books in this Journal. In fact, there is hardly any subject which so clearly coheres with economic and social history than technology. Economy and society are influenced in a high degree by technical advance and on the reverse the economic conditions are of great importance for the technical development. One has only to consider the influence of the technical development of means of transport (boats, carts, etc.) and of the use of different sources of power (water and wind driving mills, coal, electricity) on economy on the one hand, and the influence of trade on the technical development on the other hand (e.g., in the countries of the East, where modern technical development is a sequel of trade relations in the preceding centuries). Forbes says strikingly, introducing his chapter on “Power” (vol. II, p. 78): “At each stage of its history technology is the resultant of many interacting factors such as the available materials, the accumulated skill and experience of arts and crafts of the day, economic and social conditions, religious and ethical tenets and philosophical doctrines”.

The present series forms a very useful contribution to economic history. Many subjects of economic history cannot be studied without a reliable basic knowledge of ancient technology. And as this series answers to that requisite in a high degree, its use may be recommended to all students of economic history. The author pays as a rule special attention to the history of technology of the ancient Near East. Many technical inventions have their origin in the Near East, or at least their use is first known there, and so much of the work falls within the scope of this Journal. This will become clear when discussing the different subjects of the books.

On most subjects, the author gives an exposition of the nomenclature from the technical point of view—some noteworthy general remarks on nomenclature may be found in the chapter on the origin of alchemy, vol. I, pp. 123 ff. — and he has collected the quotations from ancient and other authors, so that the books are also useful from a bibliographical point of view. He gives much economic information throughout the books, e.g., on prices and trade.

Everybody who works in the field of orientalism meets almost daily with scattered evidence of technical achievements of the ancient peoples of the Orient, but as a rule too little attention is paid to it. As it is important to gather as much of this scattered evidence as is possible, in this review-article stress will be laid on it, in the hope that this may somehow serve the authors’s purpose.


The ancient history of bitumen and petroleum lay almost entirely in the ancient Near East. Several members of the petroleum family were used there for different purposes, but they fell into disuse in the Roman period, when tar and pitch, products of trees, took their place. Bitumen was not found in Egypt but the Egyptians
imported it from the region of the Dead Sea in certain periods. Bitumen found its most general use in Mesopotamia. It was gathered in several seepages, mainly in the region of Hit on the Euphrates, a place from which the Akkadian word for a certain kind of bitumen is derived 1), and also in the regions of Susa and east of the middle Tigris. Following the description of the nomenclature and classification and the places where bitumen was found, the collecting and refining of bitumen and the applications of bitumen are discussed in full 2). In Mesopotamia it was much used as a building material, both in the construction of temples and of ordinary houses, and as a waterproofing agent (in basins, on quays, in drains, etc.), while it was used in the construction of roads on the few places where roads were built (cf. also vol. II, p. 129).

Another major application, which is in principle included in waterproofing and to which some texts which will be discussed below refer, has never been given the attention it seems to deserve. Some Larsa texts from the reign of Rim-Sin (ca. 1800 B.C.) seem to contain interesting information on the use of bitumen 3).

1. YBT V 90 (lower part of the obverse of a tablet):
(x lines lost)
4 (bân) esir ša a-na li-ib-[bi ...] in-na-du-ū
1 PI 1 (bân) esir a-na li-ib-bi mášıa
8 gur esir-ē
1 PI 5 (bân) esir ša a-na 2 mášìa
iš-ta-ak-ku

4 sutu of ittū which is laid into the bulk(?) of boats(?),
1 PI 1 sutu of ittū for the bulk(?) of the boats
(totally) 8 kur of kupru,
1 PI 5 sutu of ittū,
which have been put into 2 boats of 8 kur.

The items of ittū are all preserved; these were preceded by items of kupru, just as they are in the following texts, to a total of 8 kur.

2. YBT V 231:
12 gur esir-ē má da(?)-x-lá
4 gur esir-ē AL(?).NA.KI
1 (bân) esir a-na ta-al-pi-it-tim ša gisē-má-ra
4 (bân) esir ša a-na esir-ē it-ta-ab-ku
1 PI 4 (bân) esir ša a-na li-ib-bi mášıa

12 kur of kupru for... boat,
4 kur of kupru for....
1 sutu of ittū for the cover(?) of the deckhouse, 5)
4 sutu of ittū, which have been poured on the kupru,
1 PI 4 sutu of ittū which have been poured out in the hull of the boat,

2) Detailed analyses of the bituminous products found at Ur, for the greater part by Professor Forbes, are given in Ur Exc. IV (1956), pp. 158 ff.
3) Also A. Salonen, Wasserfahrzeuge, does not mention most of the typical words of these texts.
4) Taltim is nomen actionis of the II-form of lapātu. These nouns have as a rule obtained the meaning of an object (cf. W. von Soden, Grammatik, § 561, a). Lapātu II is used for to cover with gypsum, ittū, etc. The quantities of ittū used for it are only small and it was applied to a deckhouse in this case.