executed photograph of the author and the nine-page biographical sketch will be appreciated by those who knew him and to those unfamiliar with his life will convey the pleasing impression of a strong unique personality.

C. A. Browne

CHINA'S FOREIGN TRADE IN MEDIEVAL TIMES

The history of commercial intercourse, bound up as it is with the history of the origin and development of navigation, is a most fascinating subject, more especially the study of the commercial relations between the different Oriental peoples. A valuable contribution to this subject has recently been issued by Professor Friedrich Hirth, of Columbia University, and Mr. W. W. Rockhill. This is a translation from the Chinese, with introduction and commentary, of the work by Chau Ju-Kua, treating primarily of products, and incidentally of the customs of the various countries known to the Chinese in the twelfth and thirteenth centuries of our era. The introduction by the translators supplies us with much valuable information on Chinese trade derived from a number of other sources.[1]

Of the many interesting facts to be gleaned from a perusal of this book, we can only very briefly touch upon a few of the more striking. The work appeals especially to careful and thorough students of the subject.

The trade of Canton was the object of earnest solicitude to the Chinese government, because of the large revenue derivable from it. One of the port regulations implies a determination to give all importers an equal chance, as far as possible, for as each ship arrived its cargo was discharged, and the merchandise placed in the government storehouses and kept there until the last ship of the season sailed in. Only then were goods placed at the owners' disposal for sale, the government retaining thirty per cent. as customs duties. Thus the first comer was not allowed to secure the cream of the market to the prejudice of those who might have had a longer voyage, or else have been detained by stress of weather.[2]

Toward the close of the tenth century the Chinese government, realizing the great value of its Canton trade, undertook an active propaganda to encourage its development, envoys being despatched with the wherewithal to secure the good-will of the South Sea traders. Among other inducements special trading licenses were offered. The results were soon apparent, merchandise poured in so freely that the difficulty was to find a good market for it. The rapid increase under this fostering care is shown by the fact that while from 1049 to 1053, elephants' tusks, rhinoceros horns, strings of pearls, aromatics, incense, etc., were annually imported to the value of 53,000 "units of count," these annual imports had risen in 1175 to over 500,000 "units of count." While the monetary equivalent is an unknown quantity, the figures suffice to show the great increase of the Canton trade.[3]

The government import duties amounted to thirty per cent. from the middle of the ninth century A.D. and this rate remained practically unchanged for several centuries thereafter. If any part of a ship's cargo was removed without the knowledge of the officials the whole cargo was confiscated and the offender was punished according to the gravity of the offense. Therefore we need not wonder that a Chinese authority (the Pingchou-k'o-t'an) should be able to state: "so it is that traders do not dare to violate the regulations."[4]

The Chinese author does not confine himself to a description of the chief productions of each of the regions he passes in review, although this is the principal aim of his work, but he also gives many brief notes regarding the customs, dress, etc., of the different peoples and details of the court ceremonials.

[1] Chau Ju-Kua = his work on the Chinese and Arab trade in the twelfth and thirteenth centuries, entitled "Chu-fan-chi." Translated from the Chinese and annotated by Friedrich Hirth and W. W. Rockhill, St. Petersburg, Printing Office of the Imperial Academy of Sciences, 1911. Pp. x + 288. 8°.

[2] *Op. cit.*, p. 15.

[3] *Op. cit.*, p. 19.

[4] *Op. cit.*, p. 21.

Of the Annamese we learn that the king usually rode on an elephant when he appeared in public; sometimes he was borne in a sort of hammock by four men. At court ceremonies his throne was surrounded by thirty female attendants, armed with sword and buckler. A curious custom in warfare was to bind five men together in one file; if one tried to run away the whole file was condemned to death.

The implicit faith in the virtue of written charms is illustrated by the proceedings to be taken when one of the people was killed by a tiger or a crocodile. In this case the high priest was ordered to write out a number of charms and scatter them about at the spot where the person was killed. Such was believed to be the power of the charm that the guilty animal would be invariably attracted to the place, but before he could be done away with, a royal order had to be secured.[5]

The jewel treasures of Ceylon always excited the wonder and admiration of the early travelers to that island, and Chau Ju-Kua is no exception to this rule. His description of the king's personal appearance is scarcely flattering. He is black, with unkempt hair and bare head, his body only covered with a cotton cloth of various colors wound about him, but of his abode we read:[6]

"His palace is ornamented with cat's-eyes, blue and red precious stones, carnelians and other jewels; the very floor he walks upon is so ornamented. There is an eastern and western palace, and at each there is a golden tree, the trunk and branches all of gold, the flowers, fruit and leaves of cat's-eyes, blue and red precious stones, and such like jewels. At the foot of these trees are golden thrones with opaque glass screens. When the king holds his court he uses the eastern palace in the forenoon and the western in the afternoon. When (the king) is seated, the jewels flashing in the sunshine, the glass (screens) and the jewel-trees shining on each other, make it like the glory of the rising sun.

"The king holds in his hand a jewel five inches in diameter, which can not be burnt by fire, and which shines (in the darkness of) night like a torch. The king rubs his face with it daily, and though he were passed ninety he would retain his youthful looks."

The throne of the king of Cambodia was made of "the seven precious substances," with a jeweled dais and an ivory screen. He was said to have 200,000 war elephants—a glaring exaggeration—and four large bronze elephants, each weighing 4,000 catties, stood as guards about a bronze tower or temple in the capital.

A strange test of true royalty is noted in Palembang, eastern Sumatra. Here the royal cap was of gold, studded with hundreds of precious stones, and of such crushing weight that few were able to wear it. On a king's demise all his sons were summoned together and the one who proved strong enough to bear the weight of this cap was proclaimed as the new sovereign.

The few details we have cited from this work will give some idea of the interest and value of the volume, and the full and scholarly notes with which it has been so liberally provided by its translators and editors add much to its worth as a book of reference.

GEORGE F. KUNZ

[5] *Op. cit.*, pp. 47, 48.

[6] *Op. cit.*, pp. 72, 73.

SPECIAL ARTICLES

FURTHER EXPERIMENTS ON OVARIAN TRANSPLANTATION IN GUINEA-PIGS

FOR several years we have been engaged in studying the effects of ovarian transplantation upon the inherited color characters of young guinea-pigs developing from eggs liberated by a transplanted ovary. Our method has been to transplant the ovary taken from an animal of one color variety into the body of an animal of a different color variety and then to observe whether the young showed the color characters of the mother which bore the young or of the animal which furnished the ovary, or of both. In 1909[1] we reported the first crucial experiment bearing on this ques-

[1] "A Successful Ovarian Transplantation in the Guinea-pig and its Bearing on Problems of Genetics," SCIENCE, N. S., Vol. 30, pp. 312–314. 1909.