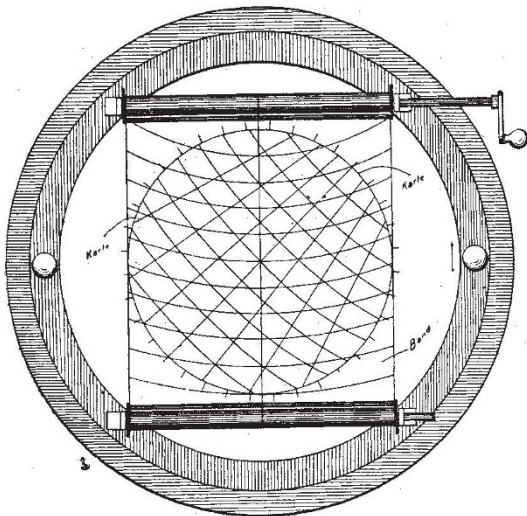


their own planes relatively to one another, so that the azimuth line of either Sumner sheet always passing the centre point of the map may be brought to any bearing in relation to the map. Now the observation of altitude of a star at a given sidereal time having been made, a table calculated for stars of that declination and for the centre point of the map is consulted so as to ascertain what is the altitude and azimuth for the particular star at the moment of observation at the mid-point of the map. One Sumner sheet is then rolled until the line representing this altitude is over the mid-point of the map, and one is turned relatively to the other until the mid-line on the Sumner sheet is over the tabulated azimuth on the scale of degrees outside the map. Then the observer at the time of observation was somewhere on the Sumner line representing the observed altitude truly projected over the map. The corresponding observation of a second star is similarly transferred and the corresponding Sumner line on the other sheet brought into position. The observer is then at the point of intersection of the two Sumner lines of observed altitudes.

It will be seen that the device and tables are of a simple character, and that by their aid the principle of the Sumner method is applied graphically, so that the position may be



seen by inspection. The figure shows the map and one of the Sumner sheets only, the one behind not being shown to avoid confusion. C. V. B.

ARCHAEOLOGICAL AND ETHNOGRAPHICAL EXPLORATIONS.

FULL details have now reached this country of the remarkable discovery made by Dr. D. B. Spooner, of the Indian Archaeological Survey, in the neighbourhood of Peshawar. Hitherto the site of the great Stupa erected at the ancient city of Purushapura by the Kushan Emperor Kanishka, who ascended the throne about 123 A.D., to enshrine the relics of Gautama Buddha, was unknown. It was described by Hieuen Tsang and other Buddhist pilgrims from China as far the most famous and magnificent of the pagodas in India. A few years ago M. Foucher, the eminent French archaeologist, suggested that it lay beneath certain tumuli in the neighbourhood of Peshawar. Excavations conducted by Dr. Spooner corroborate this identification.

The ruins are of great extent, and within the pagoda the relic chamber was reached. In it was discovered a metal casket enclosing a rock crystal reliquary. The outer casket, cylindrical in form, has a lid in the form of a lotus supporting three figures in the round, a seated Buddha in the centre, with a standing Bodhisattva on either side.

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Round it is an elaborate frieze in low relief of flying geese bearing wreaths in their beaks and figures of the Buddha, with a large, standing figure of the Emperor himself in the well-known attitude in which he appears on his coinage. The casket bears the signature of a Greek artist, Agesilaus, who describes himself as "superintendent engineer" of the monastery. Incidentally the casket throws much light upon the Græco-Indian art of the age, and supports the view that the Gandhara school was in a state of decadence.

The actual relics consist of three small fragments of the bones of the Buddha. The question of the ultimate disposal of these remains will excite much interest in the Buddhist world, and the Indian Government will doubtless consider the claims of the Burmese, Siamese, and Sinhalese religious foundations to share in the custody of relics which, like the alleged tooth of the Buddha at Kandy, are sure to receive the homage of millions of pilgrims drawn from the Buddhists of Eastern Asia.

The return is expected shortly of an expedition undertaken in 1907, under the auspices of the trustees of the British Museum and the council of the Royal Anthropological Institute, and conducted by Messrs. E. Torday, W. M. Hilton-Simpson, and N. H. Hardy, to examine the customs and culture of certain tribes in the Upper Congo region. The chief tribes which came under examination were the Batalela, Basonge, and, in particular, the Bakuba, the true name of which is now found to be Bashongo. The latest news showed that the explorers had reached the Loange river, and after exploring the hitherto unknown Tukongo people, they hoped to penetrate the Kasai region, and to return thence to Europe in September next. Large materials in the shape of photographs, maps, phonographic records, and ethnographical collections have already reached England, and a selection from them has recently been placed for exhibition in the Ethnographical Gallery of the British Museum.

Much information has been collected regarding the almost unknown Bashongos, one of the most remarkable tribes in Africa. They have preserved much of their tribal history and legends, and are particularly famous for their skill in weaving and wood-carving. Some portrait statues of their kings are remarkable works of art, exhibiting a degree of artistic skill hitherto unknown in Africa outside ancient Egypt. Their embroidered cloths, made of palm-leaf fibre, in the oldest and best examples, suggest a distinct resemblance to Celtic art. They possess a decayed form of totemism, and records of their remarkable rites of initiation, recently discontinued, have fortunately been recovered.

Mr. C. H. Read, of the British Museum, who is largely responsible for the organisation of this important expedition, may be congratulated on the successful collection of a mass of novel ethnographical material about these hitherto unknown races, which must throw much-needed light on the ethnology of Western and Central Africa.

THE MICROSCOPE AND ITS PRACTICAL APPLICATIONS.

AMONG scientific instruments, the microscope is at the present time one of the most extensively employed, either for commercial or scientific purposes. In nearly all branches of science it has now become a necessity, both as an essential factor in preliminary training and for advanced investigations or pure research work, while in commerce its uses are so wide and varied that it is difficult to see to what practical purposes it may not sooner or later be applied.

That this is the case may be due to many causes, and a by no means negligible factor is the simplification in construction and design that has in recent years been effected in the mechanical portions of the instrument and in its essential optical parts. In this respect, perhaps, a microscope differs from the majority of scientific instruments, as in most of the latter elaboration of construction—often, it must be admitted, quite unavoidable—is the usual rule; but for general purposes microscopes were never more simple in design than at the present time. This simplicity has not been obtained at the expense of