with equal certainty be joined up into a cultural chain uniting Egypt to America.

In almost every one of the focal points along this great migration route the folklore of to-day has preserved legends of the culture-heroes who introduced some one or other of the elements of this peculiarly distinctive civilization.

Those familiar with the literature of ethnology must be acquainted with hundreds of scraps of corroborative evidence testifying to the reality of the spread postulated. For I have mentioned only a small part of the extraordinary cargo of bizarre practises and beliefs with which these ancient mariners (carrying of course their characteristic ideas of naval construction and craftsmanship) set out from the African coast more than twenty-five centuries ago on the great expedition which eventually led their successors some centuries later to the New World.

At every spot where they touched and tarried, whether on the coasts of Asia, the islands of the Pacific or on the continent of America, the new culture took root and flourished in its own distinctive manner, as it was subjected to the influence of the aborigines or to that of later comers of other ideas and traditions; and each place became a fresh focus from which the new knowledge continued to radiate for long ages after the primary inoculation.

The first great cultural wave (or the series of waves of which it was composed) continued to flow for several centuries. It must have begun some time after B.C. 900, because the initial equipment of the great wanderers included practises which were not invented in Egypt until that time. The last of the series of ripples in the great wave set out from India just after the practise of cremation made its appearance there, for at the end of the series the custom of incinerating the dead made its appearance in Indonesia, Polynesia, Mexico and elsewhere.

In asking you to publish this crude sketch of views which I have set forth in greater detail elsewhere[1] I wish especially to appeal to that band of American ethnologists, whose devoted labors in rescuing the information concerning the ethnography of their country have called forth the admiration of all anthropologists, seriously to reconsider the significance of the data they are amassing.

G. ELLIOT SMITH

THE PRODUCTION OF TUNGSTEN

THE tungsten production of the United States during the first six months of 1916 exceed the production of this or any other country in any previous twelve months. Prices were even more phenomenal than production and reached more than ten times their ordinary level. The output was equivalent to about 3,290 short tons of concentrates carrying 60 per cent. WO_3, valued at $9,113,000, according to an estimate made by Frank L. Hess, of the United States Geological Survey, Department of the Interior. Statistics are valuable only so far as their accuracy is known, and this estimate is believed to be correct within 10 per cent. and to be under rather than over the true figures.

These figures are no less noteworthy when it is known that in 1915 much the larger part of the production was in the second half of the year, so that the total domestic output for the twelve months ending June 30, 1916, probably amounted to about 5,000 tons.

Colorado has regained its lead in the production of tungsten ores and, between January 1 and June 30, marketed 1,505 tons, valued at $3,638,000, of which the Boulder field furnished 1,494 tons. California sold 984 tons, valued at $3,005,000. The reason for the higher value of the California ore was that it

[1] "The Significance of the Geographical Distribution of the Practise of Mummification," now being published in the *Memoirs* of the Literary and Philosophical Society of Manchester.

was nearly all sold as high-grade concentrates, but a large part of the Colorado ore sold was of low percentage and had to be milled and concentrated, with consequent expense and loss.

From Nevada 461 tons, valued at $1,432,000, and from Arizona 175 tons, worth $565,000, are estimated to have been shipped. Smaller quantities were mined in Alaska, Connecticut, Idaho, Missouri, New Mexico, South Dakota, Utah and Washington.

Not only were the output and prices unique, but the ratio of the several tungsten minerals produced was different from that of other countries of large production. The quantities and values were approximately as follows: Ferberite, 1,495 tons, $3,590,000; scheelite, 1,404 tons, $4,322,000; wolframite, 201 tons, $613,000; and hübnerite, 185 tons, $587,000.

In most countries the prevailing mineral is wolframite, and no other country approaches the United States in the quantity of ferberite or scheelite produced. The scheelite comes mostly from Atolia, Calif., but significant quantities are mined in Nevada, Arizona, Idaho and Connecticut.

The tremendous increase of prices caused by the need for "high speed" tools to cut war steel ordered by the governments of Europe of course caused the great increase in production. Prices at the beginning of the year were irregular and depended on the buyer's need of the ore and probably on his fear of the possibility of not being able to get it when he might need it even more. Ores carrying 60 per cent. tungsten trioxide brought at that time as much as $66 a unit, but by the last of March some ferberite sold for $93.50 a unit at the mills, and even higher prices were quoted in the newspapers, though they could not be confirmed. The prices of the same ore in the New York market would naturally be somewhat higher. Under the stimulus of these high prices production, not only in this country but in the world at large, has been at the highest point ever known. At first the sudden demand created by the orders for war steel were far ahead of the instant productive power of the country. The rapid increase in prices, starting last fall at a time when tungsten mining was at a low ebb and culminating in the undreamed maximum mentioned, caused prospecting and consequent discoveries of new deposits, increase of development of known deposits, the operating at high tension of old mills, and the hasty building of new mills. As a result, the production increased faster than the consumption and soon overran the demand that would absorb the output at the extremely high prices prevailing, so that a drop in prices was inevitable. June closed with the price around $25 a unit, which was still much higher than any price known before this year. The highest price previously reported to the Geological Survey was $15 a unit, paid in 1907. The normal price has been $6 to $7.

During the six months under consideration 40 mills of various types and sizes were in operation part or all of the time on tungsten ores, and, at the end of June, 14 were under construction.

In the tungsten mining camps the excitement that followed the increase of prices was similar to that caused by important gold discoveries. Nederland, Colo., a little village of two or three dozen homes, suddenly became a town of 3,000 or more inhabitants. East of Nederland two settlements, each containing several hundred people, sprang into existence. Atolia, Calif., a camp of 60 or 80 people, grew to more than a thousand.

SCIENTIFIC NOTES AND NEWS

The Paris Academy of Sciences on June 26 elected as corresponding members Dr. Ramon y Cajal of Madrid to fill the place of M. Perez in the section of anatomy and zoology, and Dr. Morat, professor of physiology at Lyons, to succeed Dr. Zambaco Pasha in the section of medicine and surgery.

Dr. E. Perroncito, professor of bacteriology at the University of Turin, and Professor Kitasato, director of the bacteriologic institute at Tokyo, have been elected foreign members of the Paris Academy of Medicine.

Professor Hugo de Vries, professor of the University of Amsterdam and director of the Botanical Garden, has removed his residence to Lunteren, where he is building a small