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no doubt tended to infuse a further admixture of foreign blood. This circumstance would account for the occurrence of almost any type of skull among the Bulgarians, and materially increase the difficulty of determining the normal type.

Dr. BÉDDOE, referring to the remarks of Dr. Sebastian Evans, said he did not think even the massacres of that most Christian Emperor, Basil, the Bulgarian slayer, could have materially altered or confused the physical type of the Bulgarians; the original stock would soon reassert itself. Though he had himself seen only one skull and one cast, that single skull was considered by Kopernichi to represent fairly the type of the eleven he had collected from different districts in Bulgaria, and Scheiber's five were said to be on the whole very similar. The custom in the Levant of keeping the head covered was adverse to craniological observations on the living, and he should not have supposed the Bulgarians he saw there to be so dolichocephalic as measurement showed them to be. In answer to Mr. Lewis, he had described the prevailing Slavonic form of head in the paper; it was usually rather short and broad, and elliptic or oblong rather than ovate. It was well figured in Fitzinger's excellent monograph on Avar skulls. The Slavs, where least mixed in blood, were a rather fair race, with hair varying from flaxen to deep brown; and he had seen some tall fair-haired Bulgars whom he could not have distinguished from Serbs. Prof. Virchow was now expecting a number of Bulgarian skulls, the material being only too plentiful just at present, and probably he would soon throw further light on the subject.

The following paper was also read.

ETHNOLOGICAL HINTS *afforded by the* STIMULANTS *in use among* SAVAGES *and among the* ANCIENTS. By A. W. BUCKLAND.

LAST year I had the honour of laying before the British Association and this Society my views with regard to the origin and development of agriculture, and that inquiry led me naturally to the consideration of those stimulants and fermented beverages in use in very ancient times, and still made and consumed by tribes in a very low stage of civilisation; for if we glance round upon races uninfluenced by European civilisation, we shall find that all, with the exception perhaps of two or three of the very lowest in the scale of humanity, have found means of manufacturing some sort of stimulating drink, or have discovered among the herbs or trees of their native land some leaf or root or fruit possessing stimulating and invigorating properties, capable of sustaining their strength, and increasing their courage in time of need. The doctors of civilised Europe have been indebted to rude aborigines for many valuable medicinal

discoveries, the importance of which can hardly be over-estimated; the invaluable Peruvian bark is too well known to require notice here, but the rude Australian aborigines have recently brought a new stimulant to the notice of the medical profession, which according to the reports given, seems likely to rival quinine in the future. This is the *Pitbury* (*Duboisia*) a plant chewed by the natives to give them strength, and courage, the chewed portion being afterwards applied as a plaster behind the ear in order to increase the effect.*

Then we get the coca leaf of South America, eaten to increase strength and endurance,† and the Guarie leaf in South Africa, but these and many more rank rather as stimulating medicines than as *stimulants*, which term is commonly applied primarily to those fermented beverages which possess more or less an intoxicating property; nevertheless the use of these simple medicinal stimulants would seem to be the first instinctive effort of the savage towards supplying himself with something more than mere food, which although nauseous perhaps to the taste, he has found to produce an agreeable exhilaration, and an increase of strength and courage. The lower races do not appear to have gone beyond this, which is in truth only an animal instinct, since many animals resort to special plants for relief in case of sickness or wounds, which they do not habitually take as food; but no sooner do we find a knowledge of agriculture acquired by a race, than we also find them beginning to make and to use fermented liquors. Where the agricultural skill is of that imperfect and primitive type which consists in the cultivation of roots and fruits only, these fermented drinks are commonly mild in character, and composed of roots or herbs prepared in a peculiar manner; but wherever the cereals are cultivated, we generally find a sort of beer prepared from the principal cereal, and forming the chief beverage of the people,

* *Australian Plants*.—Baron Mueller has given, in an *Australian medical journal*, an account of his examination recently of the leaves of the "*Pitbury*," said to be of marvellous power as a stimulant, and to be found growing in desert scrubs from the Darling River and Barcoo to West Australia. He is of opinion that it is derived from the "*Duboisia Hopwoodii*," described by him in 1861, the leaves of which are chewed by the natives of Central Australia to invigorate themselves during long foot journeys through deserts. The blacks, he says, use the *Duboisia* to excite their courage in warfare; a large dose infuriates them. The "*Sydney Herald*" is informed also that some dry leaves and small stems, said to come from far beyond the Barcoo country, and called "*pitcherins*," are used by the aborigines as we use tobacco, for both chewing and smoking, and it is stated that a small quantity causes agreeable exhilaration, prolonged use resulting in intense excitement. It is observed that the blacks, after chewing the leaves, plaster the plug formed by so doing behind the ears, as they believe the effect is intensified thereby. See "*Colonies*," June 9th, 1876.

† The coca would seem to be as pernicious in its effects as opium when indulged in to excess.

whilst fruit wines form the luxury of the rich, and infusions of plants and herbs unfermented, continue to be used as agreeable and refreshing or medicinal beverages. The great antiquity to which cereal agriculture can be traced, would naturally cause us to ascribe an almost equal antiquity to the manufacture of some sort of beer; and we find indeed that the ancient Egyptians, who excelled in agriculture, were also celebrated for a beer or barley wine, extolled by the Greek poets and historians under the name of *zythus*. Wilkinson tells us that "Diodorus though wholly unaccustomed to it, and a native of a wine-growing country, affirms that it was scarcely inferior to the juice of the grape," and Athenæus says it was very strong and had so exhilarating an effect on the drinkers that they danced and sang and committed the same excesses as those who were intoxicated with the strongest wines. The manner in which this ancient beer was prepared is unknown, but from the testimony of Greek writers, Wilkinson thinks it must have been greatly superior to the beer or *booz*a of modern Egypt, of which he says, "the secret of preparing it from barley has remained from ancient times, but indolence having banished the trouble of adding other ingredients, they are contented with the results of simple fermentation; and bread and all similar substances which are found to undergo that process, are now employed by the Egyptians almost indifferently in making *booz*a."* We may reasonably conclude that the barley employed in making the Egyptian *zythus* underwent some process analogous to malting, since we find that process employed by African races in the present day; but it seems certain that they knew nothing of hops, and Wilkinson says "they were obliged to have recourse to other plants, in order to give it a grateful flavour, and the lupin, the skerret, and the root of an Assyrian plant were used by them for that purpose."†

This mention of an Assyrian plant leads us to infer that the beer of Egypt was known also in Assyria, whilst the knowledge of Egyptian wheat and barley among the Swiss lake-dwellers, probably points to the extension of beer-making into Europe, and to the route by which it reached our shores. But in vine-growing districts, beer was quickly resigned in favour of the luscious juice of the grape, although probably retained among the peasantry, as at present.

Wilkinson gives us a passage from *Æschylus*—

"You shall be met by men whose lively blood
Dull draughts of barley-wine have never clogged"—

* Wilkinson's "Ancient Egyptians," Vol. ii, p. 171.

† *Ibid.*

to prove that the Greeks held beer in contempt, but it is also a proof that it was not unknown to them, and was probably the common drink of the lower classes.

Turning to the far East, we find a beer in use in China, in very ancient times, and still drunk there, made, not from barley, but from a peculiar kind of rice. The invention of this beer is assigned to the reign of the first emperor of the first dynasty, whose date is reckoned at B.C. 2217. The inventor's name (Y-tie) is given by Du Halde, who adds, "The emperor, when he had tasted it, said: 'This liquor will cause great troubles in the empire.' He banished the inventor, and forbade the manufacture, but the precaution was useless, the secret of the manufacture was preserved, and it still forms one of the delights of the Chinese."* The mode of preparing this rice-beer is not given, but like the *zythus* of Egypt, it was fermented by means of herbs. The Chinese also make a beverage from Indian corn or millet steeped in water, and it is from maize or millet that the African tribes compound that beer, which forms the chief beverage of all the various races of that great continent.

It might be supposed that America, the native home of maize, so freely used throughout Africa in the manufacture of beer, would present us with various and abundant liquors made from this important cereal, but the fact seems to be that the North American Indians knew no kind of intoxicating drink before the advent of Europeans; although the Indians of South America make a drink called Chicha, from maize, in the preparation of which there is a peculiarity highly interesting to ethnologists, since fermentation is induced by the grain undergoing the process of mastication by the women of the tribe. It is chiefly in Bolivia, among the Coyas, that this disgusting practice now prevails; but there is little doubt that the custom came to them from ancient Peru, and was formerly spread widely over the southern continent, pointing strongly to some early connection with the islands of the Pacific, where, among many of the groups, the only fermented drink is Ava or Kava, prepared in a similar way, by masticating the root of the long pepper. In some of the groups and in New Zealand, the masticating process has been discontinued, and the Kava is prepared by pouring water upon the root, whilst they roast, bake, or bruise the stalks, without chewing, before the infusion; they also bruise the leaves of the plant, and pour water upon them as upon the root.† This is the mode adopted in Otahete, but as in South America the "Chicha" prepared in the primitive way is that most highly esteemed, so

* Du Halde's "History of China," Vol. ii, p. 283.

† "Inebriating Liquors," S. Morewood, 1824.

in the Pacific Islands, connoisseurs greatly prefer the chewed Kava to that which is simply steeped and bruised.* This singular mode of preparing liquors by mastication, is not, however, confined to the South Seas and South America, but we find it again in the Island of Formosa, where rice instead of maize or Kava is used in the preparation. Mr. Morewood, who collected a great deal of information upon the subject of fermented drinks, tells us that "the inhabitants of this island, particularly on the coasts, manufacture rice-wine, and distil a spirit from it, much in the same manner as in China; but the people of the interior, who are less civilised, make their drink in a very different way. Like their neighbours they plant rice and live upon the produce; but as they have no wine or other strong liquor, they make in lieu of it another sort of beverage, which if we may believe Georgius Candidius, a missionary, who resided amongst them for a length of time, is very pleasant, and no less strong than other wine. This liquor is made by the women in the following manner:—they take a quantity of rice, and boil it until it becomes soft, they then bruise it into a sort of paste, afterwards they take rice flour, which they chew, and put with their saliva into a vessel by itself, till they have a good quantity of it; this they use instead of leaven or yeast, and mixing it among the rice paste, work it together like bakers' dough; they put the whole into a large vessel, and after having poured water upon it, let it stand in that state for two months; in the meantime, the liquor works up like new wine, and the longer it is kept the better it becomes, and, as it is said, will keep good for many years. It is an agreeable liquor, as clear as pure water at top, but very muddy and thick towards the bottom. The latter, if water be not, as in some instances, added, is frequently eaten with spoons. When they go to work in the fields they take some of the thick or muddy part along with them in a vessel of cane, and in another some fresh water; these two they blend, and when the mixture has stood awhile, it serves to refresh them during the heat and labour of the day."† Thus we see that among aboriginal races, in a line across the Pacific, from Formosa on the East to Peru and Bolivia on the West, a peculiar, and what would appear to civilised races a disgusting, mode of preparing fermented drinks prevails, the women being, in all cases, the chief manufacturers; the material employed varying according to the state of agriculture in the different localities, but the mode of preparation remaining virtually the same, although, as might be supposed, the Formosans, dwelling so near the civilised

* The chewing of Kava is done chiefly by the women.

† "Inebriating Drinks," by S. Morewood, 1824, p. 130.

Chinese, have acquired a more elaborate method of preparing the grain by boiling and kneading the rice into a paste.

The Japanese make a strong beer, called *Sacki*, from rice, and the inhabitants of Java make two kinds of fermented liquor from the same cereal, the one called *Bodik*, made from rice boiled and stewed with a ferment called *Razi*, consisting of onions, black pepper, and capsicum;* and the other called *Brom*, made from *Ketan* or glutinous rice, stirred with *Razi*, and buried for several months in close earthen vessels. This plan of burying liquor is also adopted in the case of the South American *Chicha*, which is sometimes put into a jar with a large quantity of beef, on occasion of the birth of a child, and left there to be consumed at his marriage feast. This admixture of meat with fermented liquor recalls forcibly a celebrated drink called *lamb-wine*, prepared by the Mandshur Tartars from the flesh of lambs, reduced to a kind of paste with the milk of their domestic animals, or bruised to a pulpy substance with rice; it is drawn off after fermentation into jars, out of which they regale themselves, exporting the remainder into Corea and China.† But the most common drink of all the Tartar and Mongol tribes, from the most remote antiquity, is that called Koumiss or Kumiz, which is thus described in "The Book of Ser Marco Polo," translated by Colonel Henry Yule, C.B.:—"Fresh mare's milk is put in a well-seasoned bottle-necked vessel of horse-skin, a little *kurut* or some sour cow's milk is added, and when acetous fermentation is commencing, it is violently churned, with a peculiar staff, which constantly stands in the vessel. . . .

After three or four days the drink is ready. Kumiz keeps long; it is wonderfully tonic and nutritious, and it is said that it has cured many persons threatened with consumption; tribes using it being remarkably free from pulmonary disease. . . . It has a peculiar fore and after taste. Rubruquis tells us it is pungent on the tongue whilst you are drinking it, but leaves behind a pleasant flavour, like milk of almonds. . . . The Greeks and other Oriental Christians considered it a sort of denial of the faith to drink Kumiz. On the other hand, the Mohammedan converts from the nomadic tribes seemed to have adhered to Kumiz even when strict in abstinence from wine. . . . The intoxicating power of Kumiz varies according to the brew. The more advanced is the vinous fermentation, the less acid the taste, and the more it sparkles. The effect, however, is slight and transitory, and leaves no unpleasant sensation, while it produces a strong tendency to refreshing sleep. . . . There was a special kind called *Karâ Kumiz*, mentioned both by Rubruquis

* "Inebriating Drinks," by S. Morewood, 1824, p. 130.

† *Ibid.* p. 69.

and in the history of Wassaf. It seems to have been strained and clarified.* . . . The mare's-milk drink of Scythian nomads is alluded to by many ancient authors. But the manufacture of Koumiz is particularly described by Herodotus, who says: "The (mare's) milk is poured into deep wooden casks, about which the blind slaves are placed, and then the milk is stirred round. That which rises to the top is drawn off, and considered the best part; the under portion is of less account."† Perhaps Herodotus was mistaken about the wooden tubs; at least, all modern attempts to use anything but the orthodox skins have failed.‡

The "*Kurut*," used to produce fermentation, is made, according to Rubruquis,§ from the milk that remains after the butter has been made, which they allow to get as sour as sour can be, and then boil it. "In boiling it curdles, and that curd they dry in the sun, and in that way it becomes as hard as iron slag, and so it is stored in bags against the winter. In the winter when they have no milk they put that sour curd, which they call *Griut*, in a skin and pour warm water on it, and then shake it violently till the curd dissolves in the water, to which it gives an acid flavour; this water they drink in place of milk. But above all things they eschew drinking plain water."¶

This *Griut* is still made in the same manner, but sometimes of the refuse from the distillation in making milk arrack, and sometimes also from ewe's milk. The Afghans make a drink similar to Koumiss from ewe's milk, and there would seem to be a trace in our own land of a similar liquor, for in "The Transactions of the Devonshire Association for 1877," there is a description of what is called "White Ale," which is said to have been a common drink until recently in the South Hams of Devon and in Cornwall; this is known also by the name of "St. Barnaby's cow's thick milk," and is supposed to be the same as "Grout Ale," spoken of by Bishop Kennet, because the ferment used in its manufacture is still called Grout.¶ This ale although made, according to Boorde (1511-1549), of "malt and water," with the peculiar ferment called "Grout" would yet seem, from the traditional name of "*thick milk*" given to it and from the name of the ferment employed, to have been derived originally from the Tartar Koumiss.

* The book of "Ser Marco Polo," translated and edited with notes, by Col. Henry Yule, C.B. Book I, cap. 53; note 1.

† Rawlinson's "Herodotus," iv, 2.

‡ The Kaffirs now sometimes use calabashes and baskets, whilst the Europeans at the Cape employ large earthenware jars for this sour milk.

§ A Monk sent as Ambassador to the East by Louis IX, in 1258.

¶ "Marco Polo," Book i, cap. 54; note 5.

¶ Grout means both powdered meal, used in porridge, and a ferment in brewing.

This drink of sour milk, which now seems confined to the Tartar races in Asia, appears again among the Kaffir tribes in South Africa, by whom it is prepared in a very similar manner, and carefully stored in skin bags which are placed under the guardianship of one man in the village, no woman being allowed to touch them. In what way the Kaffirs became possessed of the secret of making this famous Scythic beverage we do not know. As a race they have very evidently come from a more northern land than that which they now inhabit, but it seems difficult to trace among them any Scythic affinities; nevertheless we find them also making and using another famous ancient northern beverage, mead or honey beer, called by the Bachapins "boiáloa.* This mead is fermented by means of the young brood, which I am informed is sometimes chewed to hasten the process, but this is not mentioned by travellers, and may be a misapprehension. Mead is also used by the natives of the neighbouring island of Madagascar, and Poncet tells us that it is the chief drink of Ethiopia; but in the mead of Ethiopia honey forms only *one* of the ingredients, the manufacture of this drink being thus described: "The barley which forms the basis of it is malted to a certain degree, and then dried as we do coffee, and pounded fine, while an indigenous root called *taddo* is bruised and mixed with the barley. This differs from the mead of the Kaffirs, which consists only of the fermented honey and water, and thus probably resembles more nearly the Scandinavian drink, since the northern nations could hardly have possessed grain in sufficient quantity to employ it in the making of mead."

In Russia† at the present day mead is much used, and is of two sorts, red and white, the former being coloured by the juice of cranberries, strawberries, raspberries, or cherries. It was, as we know, a favourite beverage in Britain in Anglo-Saxon times, and was known to the Greeks and Romans under the name of Hydromel.

Wulfstan, when he navigated the Baltic as far as Prussia in the eighth century, remarked that the people there brewed *no ale* because they had such plenty of honey, which was also remarked by Pythias many centuries before, who says that *mead* was the common drink of the meanest of the people, while the rich drank mare's milk, or perhaps a spirituous liquor prepared from it.‡ These two beverages thus brought under considera-

* Mead is also made by the Hottentots, who add to the honey the root of an umbelliferous plant called "Moor-wortel." See Thunberg.

† Quass, the ordinary drink of the Russian peasants, is made from barley and rye-malt and ryð-meal stirred into warm water. "Inebriating Drinks," S. Morewood, p. 258.

‡ "Inebriating Drinks," S. Morewood, p. 435.

tion together, as commonly used by the northern nations of Europe and Asia, and still both drunk by the Kaffirs in South Africa, do not appear to have been known to the Ancient Egyptians, for although honey was highly prized and used as an offering to the gods, it was, we are told, scarce in Egypt because of the lack of flowers, so that they often rowed their bees down the Nile to collect food,* and the Egyptians being an agricultural rather than a pastoral people, it was natural that grain should form the basis of their ordinary drinks. It is possible also that religious prejudices may have prevented the use of milk as a common drink; but in India, where the cow is a sacred animal, there seems to be a trace of the time when they brought from their northern home the knowledge of the Scythic *Koumiss*, in the fable of the churning of the ocean for the water of life, but it is Soma wine, the juice of the *moon-plant* (*Asclepias acida*), which is so highly praised in the Vedas.

Writing upon this subject Mrs. Speir says: "Indra," it is said, "found this treasure from heaven, hidden like the nestlings of a bird in a rock, amidst a pile of vast rocks enclosed by bushes." The manufacture of this sacred drink is thus described: "The stalks are bruised with stones, and placed with the juice in a strainer of goat's hair, and are further squeezed by the priests two fingers, ornamented by rings of flattened gold. Lastly, the juice, mixed with barley and clarified butter, ferments, and is then drawn off in a scoop for the gods, and a ladle for the priests, and then they say to Indra, 'Thy inebriety is most intense, nevertheless thy acts are most beneficent.' This Soma wine formed the chief offering to the gods; the plant was sought with care by moonlight, and brought home in a cart drawn by rams. In one of the hymns of the Rig Veda, Indra is addressed as 'Drinker of the Soma juice, wielder of the thunder-bolt, bestow upon us abundance of cows with projecting jaws.'"†

From the importance assigned to the Soma, Mrs. Speir argues justly that we may determine the locality of the Hindus at the time of the Rig Veda; she says:—"The Soma is a round, smooth, twining plant not to be found in rich soils, as we learn from Dr. Royle, but is peculiar to the mountains in the west of India, the desert to the north of Delhi, and the mountains of the Bolan Pass. The Rig Veda, therefore, could not have been composed upon the Ganges.‡ But there are other points of peculiar interest with regard to this subject. Indra, the great nature-god of the Hindus, is connected, Mrs. Speir tells us, with the horse sacrifice in honour of the sun, which is regarded as a trace of

* See Wilkinson's "Ancient Egyptians."

† See "Life in Ancient India," Mrs. Speir, pp. 52; *et seq.*

‡ *Ibid.* p. 55.

the Scythic origin of the Hindus, but the Soma so especially dedicated to Indra, is not only sacred to the moon, but was later confounded as a deity with the moon. It would seem therefore as though we saw in this the blending of the new worship of the invaders, with the older rites of the aboriginal moon dynasty, whilst the difference in the manufacture of the sacred Soma wine and the mystic *amrita* is also worthy of notice. In the former the process is analogous to the manufacture of Kava in those islands in which the dawn of civilisation has done away with the masticating process; in the latter the agitation of the ocean by means of the mountain *Mandar* used as a churning staff, or as the fire-churn, and the rising of the precious liquor to the surface, remind us forcibly of the Scythic *Koumiss*, whilst the admixture of barley and clarified butter with the Soma wine would suggest that this famous liquor was originally only a modification, necessitated by circumstances, of the beer and Koumiss of the north, the Soma being employed at first as many other plants have been employed, simply as a ferment, but manufactured afterwards in the mode adopted by the natives before the Aryan invasion, with the addition of the ingredients familiar to the invaders in their northern home. Soma wine was, however, a sacred drink, and the Institutes of Menu give us three other kinds of inebriating beverages in use among the Hindus: one made from the dregs of sugar, another from bruised rice, and a third from the flowers of the *Madhuca*, which latter is still made by the Bheels, who are supposed to represent an aboriginal race.*

Palm wine, *tari*, the original of the familiar *toddy*, is a favourite beverage in all countries wherein the palm-tree flourishes. Herodotus tells us that in the time of Cambyses (B.C. 529) the Syrians were well skilled in the manufacture of palm wine, and Strabo says that in Arabia-Felix, besides the husbandmen, there were many who made palm wine which was much used by the inhabitants, and it would seem that notwithstanding the prohibition of the Prophet, inebriating drinks are still made in Arabia, for Niebuhr says that in many parts of Arabia the Jews made wine and distilled brandy, whilst in other places a sort of beer, something like the Egyptian *curmi*, was brewed, which received an agreeable taste from an infusion of a grey herb called "Schebe."†

The Bolgars make a drink from fir-trees, also drink Hydromel; and many other fruits, roots, and grasses ‡ have been used in

* The Afghans make a strong drink from ewes' milk, and in Iceland they put whey in barrels and drink it after fermentation. See Morewood.

† "Inebriating Drinks," S. Morewood, p. 55. *Ibid.* p. 265.

‡ The Kanatschatkans make a spirit from a grass called "Stalkais-kava."

various countries in the manufacture of fermented beverages, but the only one deserving special mention here is the *pulque* of Mexico, made from the *agave* or American aloe, which like the Indian Soma wine was a sacred liquor, but like the Kava of South Seas was also the common drink of the people.

As before noticed, the Red Indians had no fermented drink, but Schoolcraft says: "It is well attested that the Aztecs and other Mexican and Southern tribes had their pulque and other intoxicating drinks, which they possessed the art of making from various native grains and fruits. But the art itself, with the plants employed, was confined to those latitudes, and there is no historical evidence to prove that it was ever known or practised by the tribes situated north and east of the Gulf of Mexico."* This absence of intoxicating beverages among the Red Indians would militate against the theory of their Asiatic origin, and equally against the unity of race of the whole continent, as the fondness for intoxicants exhibited by these tribes since the introduction of the spirituous liquors of the White man, proves that they would have continued to make and use the beverages of their ancestors or of their neighbours, had they ever attained to a knowledge of them; therefore if they were originally of Mongolian origin, they must have separated from the parent stock before the latter had become a pastoral people delighting in that fermented milk which has extended over northern Asia, and reached to Iceland and South Africa, and which probably had a wider range still before it was superseded by drinks prepared from fermented grain of various kinds among agricultural races, and by *wine*, that is, the fermented *juice of the grape*, among more highly civilised peoples.

Grape wine, which has become so familiar to us in modern times, dates back, as we all know, to the time of Noah; nevertheless its range in ancient times seems to have been somewhat circumscribed, embracing only Western Asia, Egypt, Greece and Rome. Even where grapes grew abundantly they were not always employed in the manufacture of wine; thus in China, where grapes undoubtedly grew of old, wine, even if made at all, which is doubtful, never attained popularity, and by the decrees of various emperors, the vines have been extirpated; and we learn from the "Book of Ser Marco Polo" that, "the founder of the Ming dynasty in 1373 accepted an offering of wine of the vine from Thaiynan, which was celebrated for its vines, but prohibited its being presented again." We are told also that although there are excellent grapes in many parts of Ethiopia, no wine is manufactured, mead being the chief drink. But the juice of the

* "The Indian in his Wigwam." Schoolcraft, p. 368.

grape was undoubtedly known and esteemed in very ancient times among the Hebrews, Egyptians, Assyrians, Persians, Greeks and Romans. "Sir James Malcolm says in his account of Persia that the natives have a tradition that wine was discovered by their King Jemisheed through accident. This monarch had an extraordinary fondness for grapes, and placed a quantity in a vessel in a cellar for future use. Some time after, the vessel being opened, the grapes were found to have fermented, and were supposed to have become poisonous. A lady of the Harem, tired of her life, from severe nervous headache, drank some of the supposed poison, slept, awoke well, and afterwards finished all the poison; the monarch took the hint, and improved upon it for his own advantage."*

It is worthy of remark that the wine of the East, like the Koumiss of the Tartars, was stored in skins, and in this form was first introduced into Greece and Rome, and so strong is the force of an acquired taste, that when earthen amphoræ, such as were used in Egypt and in China, were adopted, they invariably smeared them internally with resin and other substances, to impart to the wine as much as possible the flavour derived from the original skin bags; and it would appear that this custom is still retained in modern Greece, for Redding says, "The modern traveller in Greece cannot drink a small quantity of the wine there without water, for the intense headache it excites, owing to the infusion of resin, pitch, and other similar ingredients; substances of the same nature as were infused in the Augustan age in the dry as well as other wines."†

Pliny enumerates fifty kinds of generous wines; thirty-eight kinds of foreign wines; seven kinds of salted wines, that is, must mixed with sea-water; eighteen kinds of sweet wines, including raisin wine and hepsema; three varieties of second-rate wine; and sixty-six varieties of artificial wine.‡ Of all these, the wines perfumed with myrrh were the most esteemed by the Romans. The artificial wines were formed of must, mixed with all sorts of garden plants, such as radishes, asparagus, parsley, wormwood, &c., &c. Most of these were used medicinally, and it may be observed that the unpalatable wormwood is still used to make the favourite liqueur of the French, *absinthe*. In Egypt also, figs, pomegranates, myxos, and other fruits were used for making artificial wines, and herbs were added for flavour and for medicinal qualities,§ and, in truth, the use of

* Redding "On Modern Wines," p. 83.

† *Ibid.* p. 18.

‡ Pliny, Book xiv.

§ See Wilkinson's "Ancient Egyptians."

herbs as medicines seems to lie at the root of all the beverages of the ancients and of modern savages.

Time will not permit me to enter into the most interesting subject of narcotics and poisons used by way of ordeal, nor can I here treat fully of the various unfermented beverages used in various parts of the world, such as the tea of China and Japan, the maté of South America, the liquor made from guarana bread in Brazil, the chicolatl of Mexico, the coffee of Arabia and Africa; but in summing up what we have gathered from the imperfect records of travellers upon the stimulants above noticed as in use among the natives of various lands, we may, I think, conclude that among the lowest races roots and leaves are commonly chewed as stimulants, and no intoxicant is known. Thus we have the *Pitbury* in use among the savage Australians. The Kon or Canna-root (*mesembryanthemum emarcidum*) chewed by the Bushmen and Hottentots, of which Thunberg says: "The Hottentots come far and near to fetch this shrub, with the root, leaves and all, which they beat together and afterwards twist them up like pig-tail tobacco; after which they let the mass ferment and keep it by them for chewing, especially when they are thirsty. If it be chewed immediately after fermentation it intoxicates." Adding, "the Hottentots who traverse the dry carrow-fields (*Karoo*) use several means, not only to assuage their hunger, but more particularly to quench their thirst. Besides the above-mentioned plant called Kon or Gunna, they use two others, namely, one called Kameká or Barup, which is said to be a large and watery root; and another called *Ku*, which is likewise, according to report, a large and succulent root."* The use of the areca or betel-nut with lime, in New Guinea and many islands of the Eastern Archipelago, is well-known, and a similar custom prevails in South America, for Bollaert says of the Indians of Tarapaca: "With a little toasted maize and coca, they will travel for days over the most desert tracks. The coca is masticated with Kipta, an alkaline ash mixed with boiled potato."†

It may be observed that the use of leaves in this manner is a necessity in hot climates where water is scarce, and which even when obtainable is frequently unwholesome, and it is to this circumstance probably that we must attribute the universal use of stimulants. Moses, when he cast into the bitter waters of Meribah a branch of a certain tree, did that which the natives of Africa and other desert lands have been taught by necessity to do, that is, to render brackish and unwholesome water drinkable, if not palatable, by an infusion of herbs; and this was

* Thunberg's "Account of the Cape of Good Hope."

† "Antiquities of South America," W. Bollaert, p. 250.

doubtless the origin of the various teas consumed by natives of Asia, Africa, and America, one only of which has become a favourite European beverage, although we have adopted coffee, chocolate, and cocoa from their original consumers. To this also may be traced the second stage in the history of stimulants in which the chewed leaf or root being infused in water a slight fermentation ensues, and a beverage is produced which is mildly intoxicating, as the Kava of the South Seas. Among agricultural races the *grains* cultivated are pounded and infused instead of the leaves and roots of an earlier stage, the latter, however, being retained to flavour and ferment the various beers thus made; hence, although hops were unknown to the ancients, various plants supplied their place with regard to flavour, and although they do not appear to have had the same efficacy as a preservative they were found useful in aiding fermentation. Hence we are told, "the Kaffirs have no yeast, but employ a rather curious substitute for it, being the stem of a species of ice plant, dried and kept ready for use;"* whilst the Chinese hop is a preparation containing leaven, so that its use causes fermentation. Among pastoral tribes the milk of their flocks and herds became their natural drink, and the readiness with which this ferments, and the impossibility of keeping it long fresh, led to its use in the form of a powerful stimulant, whilst in a higher stage of civilisation the juice of the grape, either grown or imported, gradually superseded the more primitive beverages. But in all these stages may be traced the lower stage through which each has passed; thus the chewing of leaves as practised by savages, either to quench thirst or produce strength and courage, is retained among agricultural races chiefly in the form of medicine, a peculiar efficacy being attributed to the process of mastication; hence in Central Africa the root of the Kala is chewed and applied to a wound as an antidote to the poisonous N'gwa grub. The fermentation of grain was probably at first produced by mastication, in the same manner as the Kava of the South Seas; but this process is now confined to the Chicha of South America, and the rice beer of Formosa, as before pointed out, whilst the healing and invigorating properties attached to various plants, as discovered in most instances by savages, have led to their medicinal use in all ages; and upon the birth of religion caused the deification of various plants, and led later to their dedication to special gods, and to their superstitious use in religious ceremonies, culminating in the universal worship of Bacchus, the personified vine, in civilised Greece and Rome. The health-giving properties attributed to the several drinks we

* Wood's "Natural History of Man" (Africa), p. 163.

have described, imparted a religious character to their use, so that all drunken orgies, from the Kava-drinking of the South Seas to the feasts of the civilised Greeks, were commenced with libations to the gods. Hence, too, arose various ceremonies, one of which, that of the drinking of healths at feasts, has survived to our own day, hence also certain prohibitions became attached to the use of fermented liquors. The priests of Heliopolis and other places were forbidden the use of wine; women among the Kaffirs may not touch the milk bags, and during the early period of Roman History they were not allowed to drink wine. Even the shape and material of the vessels used seems to have been regarded as important. In most ancient nations the drinking-cups were pointed in form, that they might be emptied at a draught, and the Kava of the South Seas is still drunk from pointed cups of banana leaf, which are emptied and thrown down to be re-filled.

Perhaps the leaf was considered the proper receptacle for the produce of the plant, for we find that even where pottery was abundant, leaves were employed to make drinking vessels. Pliny tells us that the Egyptians plaited the leaves of the Colocasia with such skill as to make use of them for drinking vessels: in many parts of Africa grass baskets are still manufactured to hold the beer and milk of the natives, and "finely wrought reed baskets, in various colours, capable of holding water,"* have been found with mummies in Peru, whilst perhaps the finely plaited basket-work surrounding the delicate porcelain cups of China may be a survival of the same custom.

I have said nothing of the art of distillation, because that is comparatively modern. Its origin is usually ascribed to the Arabs, but it was undoubtedly early known to the Tartars, who from their Koumiss extracted a spirit called "*Araka*," conjectured by some from its high antiquity to be the true source from whence the Indian arrack derives its name.† Pliny too is supposed to refer to this art in the passage "Oh wondrous craft of the vices! by some mode or other it was discovered that water also might be made to inebriate."‡ Zozimus also in the fourth or fifth century is said to have figured a still; but whatever may be the antiquity of the art, it is the disgrace of our modern civilisation to have introduced among savage races that pernicious fire-water, which in so many instances has supplanted the mildly fermented stimulants to which they have been accustomed, and has become one of the chief factors in their rapid extermination.

* Bollaert's "*Antiquities of South America*," p. 157.

† "*Inebriating Liquors*," S. Morewood, p. 67.

‡ Pliny, N.H. Book xiv, p. 22.

DISCUSSION.

Dr. BEDDOE said, that in reference to Koumiss and its supposed anti-phthical properties, he had once heard an amusing little speech from the great Skoda. A discussion was going on in the Vienna Medical Society, which somewhat reminded him of that famous one in the early days of our Royal Society. It was on the exemption of the Bashkirs from consumption, by reason of their drinking Koumiss; some explained it in one way, some in another. Then said Skoda, "Respecting these wretched Bashkirs, and how from phthisis, by reason of their Koumiss-drinking, altogether exempt they be; this night has very much been said, but for my part I most potently believe that, in addition to the other miseries of their God-forgotten condition, they not only from phthisis are not free, but from it altogether as much as we, if not even greatly more, do suffer."

The DIRECTOR read a paper contributed by Mr. SANDERSON on "Polygamous Marriages in South Africa."

POLYGAMOUS MARRIAGE *among the KAFIRS of NATAL and COUNTRIES AROUND.* By JOHN SANDERSON, Esq.

Having, a few years ago, been led to make some inquiry into the numbers of children, with their respective sexes, born among the Kafirs resident in Natal or the countries adjoining, it may not be without interest for this meeting that I should communicate the results. The mass of facts collected is too small to warrant any positive general deductions, but small as it is, it will not be altogether without value if it suggest some line of further investigation for those who may be enabled to pursue it.

Even in Natal, I need hardly say, no official statistics of this character are obtainable, and my information is, therefore, derived from inquiries among intelligent natives, whose replies, in reference to their own families, and those of their connections, were generally given so readily and precisely that I am prepared to accept them without hesitation, as fairly correct. One or two cases in which any doubt was exhibited as to the sex of the children, I have not taken into account at all.

The number of households to which the following figures relate is fifteen, in five of which the wives were two each; in four they numbered three; in two they were four; and in two they were five in number; while in the two remaining, the husband had six and eight wives respectively. It is to be noted, however, that in probably none of the cases can the number be