

and in a series of tables he brings out the fact that the number of colonies does not by any means correspond with the number of species, though in some cases it undoubtedly does so. This is, in fact, an exceedingly variable quantity. It also comes out that putrefactive bacteria are almost invariably absent from spring water; that they are most frequently found where the number of species is great, and where the number of colonies is between 1,000 and 10,000 per cubic centimetre; that they also occur where the number of germs is below fifty per cubic centimetre, but very seldom where the number is over 10,000.

Dr. L. Schmelk, who recently (*Centralbl. f. Bakt. und Parasitenk.*, Bd. IV., No. 7, p. 195) pointed out that there is a great increase in the number of bacteria in the water supply of Christiania during the period that the upland snows are melting most actively, now (*Centralbl. f. Bakt. und Parasitenk.*, Bd., VII., No. 4, p. 102) gives further evidence collected during the last three years in proof of his theory. The numbers he finds for those years were ten or fifteen per cubic centimetre in March to 2,500 in April, 1888; 1,100 in 1889, and on March 28, 1890, 5,000; the breaking up of the winter snows having occurred this year much earlier than usual. This is the period during which the winter snows are melting, and after this is completed there is no marked increase in the number of bacteria in the lake water until the reappearance of the winter snows, some of the earlier falls of which during October, November, and December melt and disappear. In December the number of bacteria per cubic centimetre sometimes reaches 600, the highest point recorded during the year except in March. Dr. Schmelk thinks that the increase is due to the action of frost in breaking up the earth's surface, from which the contained organisms may be set free as soon as a thaw occurs and then washed away along with the surface soil, just as during great rain-storms. He also points out that the masses of ice projecting into a river may form "collecting" points for the particles suspended in the flowing water, as more bacteria are always found in the water obtained from such ice when melted than in the river water itself. He verified this by repeated experiments. He found, however, that when floating ice was melting in water, though it contained a few more organisms than water collected near the surface, it held far fewer than water taken from a considerable depth. In the Christiania water-supply he found some thirty species of bacteria, some of which occurred very seldom, some at certain periods of the year only, and a few all the year round. The amount of solids in the water varies from time to time, between 0.92 and 0.94 grammes per litre, and traces of ammonia can usually be found in water during the time that it contains most bacteria.

THE CHINOOK JARGON.

DURING my visits to the north Pacific coast I became familiar with the Chinook Jargon as spoken in various districts. The jargon is used nowadays most extensively on Puget Sound and in British Columbia, while its use on Columbia River and in the neighboring parts of Oregon and Washington is rather restricted. It has spread as far north as Chilcat and as far south as northern California. The Jargon, as spoken on Puget Sound and farther north, contains a much smaller number of words than the printed vocabularies, a great number of the Chinook words being dropped.

On Columbia River and Shoalwater Bay I found a few additional words belonging to the same dialect of the jargon which was recorded by Horatio Hale and George Gibbs. In recording these words I made use of the same phonetic spelling which has been used in the reports to the British Association for the Advancement of Sci-

ence on the North-western Tribes of Canada: To accompany, *ā'ec* bone of fish, *pēk'*; to call, *teō'lak*; to carry on back, *tō'te*; to dream, *mō'sum nā'nite*; to give food, *ō'ma* (Chihlish); to give present, *k'ōē'en*; grandchild, *kōi'm* (Chihlish); last, *ubō't* (= French *au bout*?); let us, *haw'ansē*; to make, *qē'lemittl*.

Mamook has acquired an obscene meaning, and is no longer in use on the Columbia River. Muskrat, *tsini'stsinis*; fire is out, *tequp*; to pursue, *mē'tl'en*, or *te'k's'en*: to put aside, up, *tō'en*; to rest, *alē'm*; to roast, *p'e'nis*; robin, *pil k'outē'n* (= red-belly); to sew, *kyē'pot*; soup, *bō'yō* (French); to stop, *k'a* (Chinook); tail, *tēl* (English); to vomit, *ō'E*.

One expression which is not found in the published vocabularies, and which is unknown on Columbia River, was obtained on the Siletz Reservation, Oregon: at that time, *kōpa k'ō'ēt*. In a few cases the meaning of the words differed somewhat from that given in the vocabularies: to sew, *mamook tipshin* (Hale, "The Oregon Trade Language," p. 60); it means, on Shoalwater Bay and in Clatsop, to mend. To lose the way, *tseepie wayhut* (Hale, p. 60), is not used on Shoalwater Bay, *tseepie* meaning only, to miss an aim. To vomit, *wagh* (Hale, p. 52), not in use in the same region. To tear, *kluh* (Hale, p. 45), means also, to fall.

A number of words which were considered as the sole and original property of the jargon prove to be of Chinook origin: *anah*, exclamation of pain or displeasure; *heehee*, to laugh; *hum*, stinking; *kwehkwēh*, mallard duck; *lala*, long time; *liplip*, to boil; *na*, interrogative particle; *nah*, interjection: ho! look here!; *poh*, a puff of breath; *toto*, to shake.

I believe almost all onomatopœtic words of the jargon are derived from the Chinook. The word *kwaddis*, whale, which is given as a jargon word, is of Tillamook origin. A few other words, the origin of which could not be traced, belong to the lower Chinook: *ekkeh*, brother-in-law; *kelapi*, to turn; *tukwilla*, nuts. Two words, which have been derived from English, are more probably of Chinook origin: *till*, tired (*tel* in Chinook); *spose*, if, which is generally derived from "suppose," but is more frequently pronounced *pōs* on Columbia River. *Pōs* means in Chinook, if; so that *spose* may be explained as due to folk-etymology on the part of the traders, or *pōs* as folk-etymology on the part of the Chinook.

It is of interest to note that two Nootka words which are found in the jargon have very close analoga in Chinook: *chuck*, water (*tlituk* in Chinook); *wawa*, to speak (*awā'wa* in Chinook). A number of Chinook terms which have been embodied in the jargon have become extinct in Chinook proper. This is due to the fact that they have been dropped after the death of persons whose names resembled these words: *tmē'maluct* (jargon, *mimaloose*) is now *temēuwa'lema*; *it'amā'noac* (jargon, *tamahnowus*) is now *it'lema*.

FRANZ BOAS.

Worcester, Mass., February.

NOTES AND NEWS.

EXPERIMENTAL psychology can count four new laboratories among its acquisitions during the present academic year, those that have been or are about to be established at Heidelberg (Germany), Geneva (Switzerland), Cornell (New York), and the Catholic University (Washington).

—The Oriental Club of Philadelphia was organized in 1888 with Professor Herman V. Hilfrecht as president, Professor M. W. Easton, treasurer, and Stuart Culin, secretary. It has held regular monthly meetings since that time, at which formal papers were read and discussed. The membership of the club is limited to thirty, and now numbers twenty-five, including Professor Paul Haupt and Dr. Cyrus Adler of Johns Hopkins University, Professors Barton, Hopkins, and Collitz of Bryn Mawr College; Professors Jastrow, Easton, Hilfrecht, Brinton, and Peters of the University of Pennsylvania, the Rev. Dr. Morris Jastrow, and others, it being strictly confined to oriental scholars.

—At the February meeting of the Oriental Club of Philadelphia, Mrs. Cornelius Stevenson read a paper on "Two Ancient Forms of Religious Symbolism, the Stone Axe and the Flying Sun-Disc." "The stone axe," the speaker said, "is the weapon of the power