

## Indian Tooth Shell Money

In the days before the white man with his gold and silver currency invaded the northern part of California, the tribes known as the Tolowa, Karok, Yurok and Hupa had a well defined monetary system established, the principal medium of exchange being the peculiarly shaped, long, white, curving dentalium or tusk shells.

Recently there came to the Museum of the American Indian Heye Foundation several strings of this shell money. In the period of American occupancy of California immediately after the gold rush and up until the late 80's, this odd currency circulated among the Indians and whites as well. Today, although new, undecorated shells of the ordinary or "woman's dentalia" are quite common, the longer, quaintly ornamented shells are becoming scarcer and scarcer and it is only when some aged Indian, pressed by the high cost of living and importuned by his younger and more modern relatives, reluctantly parts with his symbol of wealth, that the old time money comes to light.

In primitive times, the dentalium shells used as money were from one and seven-eighths to two and one-half inches in length. The longest shells were valued at \$5 each, the shortest between twenty-five and fifty cents. The shells were strung on leather or sinew cords, eleven to fifteen shells being the general length of the strings. The eleven shell string was the most valuable and allowing for fluctuation and method of measurements was roughly valued at \$50.

In measuring an individual shell, the units of measure were the fingers. The longest shells were placed on the little finger and a shell to be of the utmost value should reach from the farther crease of the little finger to the fold in the palm below. Other sizes were matched against the middle finger. In some cases men had their forearms tattooed with a series of marks whereby whole strings could be measured.

Currency of this sort was in demand and the owners treasured it above all else. The majority of such odd "coins" were often profusely decorated with incised lines or wrapped with thin spirals of snake skin. Occasionally woodpecker scalps would be tied in small tufts to the precious things. In order to keep

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## Soap "Tails" Make Washing Possible

Following are additional reports of the meeting of the National Academy of Sciences at Urbana, Ill., by Edwin E. Slosson.

The chemistry of soap-suds was elucidated by Prof. W. D. Harkins of the University of Chicago. In the cleansing process the minute particles of soap capture and carry away drops of grease by surrounding them. The droplet of oil is too small to be seen, being only about one ten-thousandth of an inch in diameter, yet it requires twenty million molecules of soap to surround it with a film one molecule thick.

The soap molecule is fitted to act as the connecting link between oil and water for it consists of a long thin chain of carbon atoms, with one end of an oily mixture and the other more like water in composition. All the molecules of the soap line up in the same position around the oil drop with oil-like tails turned in towards the oil and with water-like heads sticking out towards the surrounding water. The oily ends are charged with negative electricity and so the oil drops are kept apart by the mutual repulsion of their negative charges. Thus particles of dirt or grease can be held in suspension in water in the form of an emulsion although they are insoluble in water.

### Leprosy Being Conquered

Leprosy, the most horror-inspiring of human diseases ever since Bible times, is being knocked out by a combination of botanical and chemical research. Speaking before the Academy, Dr. Roger Adams told how chaulmoogra oil, brought to the western world by botanical explorers in the Orient, is being improved on by the synthetic chemist. The oil itself is not the thing that is deadly to the leprosy germ, it was found, but rather two natural acids which developed from it. Chemical examination of these acids showed that each was built of a five-cornered ring of carbon and hydrogen atoms, with a chain of other atoms sticking out at one side like a tail. By piling extra atoms on this tail at a certain point, brand-new kinds of acid, that had never existed anywhere before, could be created. And it was found that these new acids were far more effective as leprosy germ killers than the natural acids—some of them as much as fifty or a hundred times as strong as the natural product.

### Fight Against Corn Blight

A nation-wide campaign against blight or scab affecting corn, winter wheat and other crops, to be carried on by the cooperation of the agricultural experiment stations of Wisconsin and Illinois and the U. S. Department of Agriculture, was announced by Dr. L. R. Jones of the University of Wisconsin.

The cabbage wilt that threatened a few years ago to wipe out the cabbage crop from Kansas to the Atlantic coast has been kept in check by cultivating resistant varieties. Dr. J. C. Walker, one of Prof. Jones' students, found that certain plants remained unharmed in fields devastated by the disease. By breeding from such immune individuals it has been possible to develop in all the principal types of cabbage forms capable of withstanding this malignant fungus.

The wilt disease of the China aster was next attacked by the same method of selection and controlled breeding, and now this undertaking seems to be on the eve of success. Asters resisting their wilt disease have been developed and seeds from this strain will soon be ready for sale.

In studies on resistant varieties of tobacco it was learned how the roots keep out the invading fungus. These malignant parasitic threads invade the tissues through minute natural wounds, in ordinary non-resistant varieties. Resistant varieties have the power of forming a layer of cork across such wounds so rapidly that entrance is impossible; or if the fungus has been quick enough to get a small start, a second-line defense of corky material is thrown across its path within the tissues, and thus effectually block it off.

### "Presbyota"

A new name for an old ailment was sprung by Dr. J. McKean Cattell, editor of the periodical *Science* and formerly professor of psychology at Columbia University. It is "presbyota," which is Greek for "old ears," and may hereafter be used by elderly persons in place of saying that they are "a bit hard of hearing." It corresponds to "presbyopia," which applies to the falling off in sharpness of sight characteristic of advancing years.

Dr. Cattell believes that such deficiency of hearing may be regarded

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## Chemical "Tails" on Soap

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as normal after middle life and he ascribes it to a gradual loss of elasticity in the receiving apparatus of the ear, which does not react as readily as formerly to the rapid vibrations of the voice. The ear is slower to respond to the shorter waves and the motion subsides more gradually. Consequently words or notes of music following in quick succession are run together and indistinguishable.

Persons with "presbyota" find it impossible to hear sounds of high frequency such as a shrill whistle or the chirp of a cricket or katydid. The uppermost notes of a piano carry nothing to their ears but the click of the keys. Since we distinguish voices and appreciate music mainly by the overtones of high frequency, elderly people have difficulty in listening to a lecture or theater performance.

As Dr. Cattell said: "Sounds separated by one five-hundredth of a second can be discriminated, but with speech sounds given at longer intervals are fused. We can speak about as rapidly as we can hear—some twenty changes a second. In order to be heard by one of deficient hearing, or by an audience, it is necessary to speak not more loudly, but more distinctly and more slowly. If we try to make ourselves heard by shouting, we only distort and blur the tones, like an overloaded radio loudspeaker."

Science News-Letter, October 29, 1927

Samples of air in different parts of Paris are being collected and analyzed in order to determine the degree of offensive odors and the extent of uncleanliness.

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Science News-Letter, October 29, 1927

Eighty-nine per cent of the gasoline tax receipts are used for rural roads and highways.

It has been estimated that eggs and poultry produced in the United States equal in value all the gold and silver mined throughout the world.

A German inventor is said to have patented a slow motion picture apparatus which makes it possible to take as many as 48,000 pictures a second.

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the "otlwetsik" or "human beings their dentalium" as it was called by the Yuroks, safe from harm, the Californian financiers carried their wealth in purses made of elk horn, hollowed out and decorated with incised geometric designs.

Strangely enough, the tribes that prized the shell currency the most highly were not the ones who took it from the ocean bed. The dentalia in olden times were fished from sand bars off the mouths of northern rivers by Indians inhabiting Vancouver Island, the northern coast of Oregon and British Columbia.

The shells were traded southward and after passing through several hands finally arrived in the California country where they were eagerly received.

With such wealth the tribal magnates bought houses and canoes, wives and clothing, furs, obsidian blades, woodpecker scalps, tobacco, etc. The obsidian blades, huge things often two and a half feet long and five inches and more in width, of both black and red obsidian, and the brilliant red top knots of the common woodpecker were also deemed units of wealth. Even today these objects are held above all other items of native manufacture or use. The albino or white deer skin is likewise considered a rare treasure and when a man can display such a skin in the "White Deerskin" dance along with one or more obsidian blades and a headband of redheaded woodpecker scalps, he is indeed a plutocrat.

Science News-Letter, October 29, 1927

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