

SCIENCE:

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Attention is called to the "Wants" column. All are invited to use it in soliciting information or seeking new positions. The name and address of applicants should be given in full, so that answers will go direct to them. The "Exchange" column is likewise open.

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CONTENTS:

BEVERAGES. <i>Edgar Richards</i>	127	LETTERS TO THE EDITOR.	
THE STANDARD OF LIVING IN THE		Source of the Rocky Mountain	
UNITED STATES. <i>J. R. Dodge</i> ..	131	Precipitation. <i>G. H. Stone</i>	134
NOTES AND NEWS.....	123	Professor A. Graham Bell's	
HEALTH MATTERS.		Studies of the Deaf	
Should Beer be drunk out of		<i>A. Graham Bell</i> 135	
Glass?.....	134	Treatment of Snake Bites	
A New Butter Substitute.....	134	<i>Q. C. Smith</i> 136	
Is Fair Hair becoming Extinct? 134		Temperature in Storms and High	
Denicotinizing Tobacco Smoke.. 134		Areas. <i>H. A. Hazen</i>	126
		AMONG THE PUBLISHERS.....	139

HEALTH MATTERS.

Should Beer be drunk out of Glass?

THE *Boston Medical and Surgical Journal*, quoting from a German industrial periodical, says that a spirited contest has for some while been waged in Germany between the beer-glass and the stone-mug factions. Dr. Schultze claims to have established, by a very extended series of experiments, that beer, by as little as five minutes' standing in any glass, even when cold and in the dark, will be materially affected both in taste and odor. He sustains his claims by trial tests confirmed by some one hundred persons. The change, he thinks, is due to the slight solubility of the glass substance in the beer. This is of further importance from the fact that the glass most generally used contains lead, which has been added for its better and more easy manipulation in manufacture. From a series of experiments made upon glasses obtained from the leading sources of supply, he determined that one cubic centimetre of beer, by five minutes' standing in glass, dissolved 6 to 26 ten-millionths of a milligram of the glass substance containing 0 to 48 thousand millionths of a milligram of lead-oxide. This small quantity of glass substance he claims affects the taste of the beer, and, if it also contains this lead, renders it objectionable from sanitary reasons. He recommends for use as a normal test drinking vessel, whereby one can surely and easily determine the fitness or unfitness of any other vessel, a silver mug gilded upon its inner surface, the beer to be first tasted out of the silver mug, and then out of the other vessel. He gives the following comparative scale of fitness for beer vessels as

made out of different material: All lead-glazed mugs are to be wholly excluded. Covered salt-glazed stone mugs he ranks as good, but tin ones as better, and gold-lined silver mugs as the best. Hard lead-free glass he ranks as poor, but soft-pressed glass as still poorer, and poorest of all lead glass, either pressed or blown. Porcelain, even that made at Meissen, he thinks not serviceable. Wood mugs are doubtful on account of the pitch varnish, which, even if it should not flavor the beer, yet is liable to induce loss of sleep and headache.

Dr. Schultze's conclusions have been discussed and disputed by Professor Linke, he claiming that, according to Schultze's own showing, 20,800 litres of beer out of the very worst kind of lead beer glass must be drunk within fifty-seven years, in order to take in even one milligram of lead-oxide into the body of one drinking a litre of beer a day. From an average quality of lead glass, it would take 74,000 litres and two hundred and three years to accomplish the same. Moreover, he claims that Schultze's lead quantities are seventy-six times too great, and that therefore it would require that much longer time to imbibe that small amount of lead.

A New Butter Substitute.

According to the *Boston Medical and Surgical Journal*, M. Heckel and Schlagdenhauffer have discovered and reported upon a certain Spanish broom-like bush, native of the west coast of Africa, which belongs to the Polygala family, and to which they have given the specific name of butyracea. The native name of the bush is Malonkang or Ankalaki. Its seeds yield 17.5 per cent of a yellowish butter-like fat of a very agreeable nutty flavor, and which could well serve as a substitute for butter. The fat softens between 28° and 30° C., beginning to melt at 35°, but does not become fluid below 52°. Upon cooling, it remains fluid for a long time, only beginning to solidify at 33°, when it regains its original consistency. Its density at between 35° and 38° C. is 0.904. It saponifies very easily with alkalis, and contains 31.5 per cent olein, 4.8 per cent free palmitic acid, 57.54 per cent palmitin, and 6.16 per cent myristin. It contains small quantities of formic and acetic acids, but no butyric or valerianic acid, and therefore it does not easily become rancid.

Is Fair Hair becoming Extinct?

The *British Medical Journal* concludes an article on hair as follows: "On various grounds, therefore, it would seem as if the fair hair so much beloved by poets and artists is doomed to be encroached upon, and even replaced, by that of darker hue. The rate at which this is taking place is probably very slow, from the fact that Nature is most conservative in her changes."

Denicotinizing Tobacco Smoke.

According to the *British Medical Journal*, Dr. Gautrelet, of Vichy, claims to have discovered a method of rendering tobacco harmless to mouth, heart, and nerves without detriment to its aroma. According to him, a piece of cotton wool steeped in a 5 to 10 per cent solution of pyrogalllic acid inserted in the pipe or cigar holder will neutralize any possible ill effects of the nicotine. In this way not only may the generally admitted evils of smoking be prevented, but cirrhosis of the liver, which in Dr. Gautrelet's experience is sometimes caused by tobacco, and such lighter penalties of over-indulgence as headache and furring of the tongue, may be avoided. Citric acid, which was recommended by Vigier for the same purpose, has the serious disadvantage of spoiling the taste of the tobacco.

LETTERS TO THE EDITOR.

Source of the Rocky Mountain Precipitation.

It has often been a question whether more of the moisture of Colorado came from the Gulf of Mexico or from the Pacific Ocean. The fact that the rivers that drain the western slopes of the Colorado mountains, such as the Yampa, the White, the Grand, and the San Juan, are larger in the aggregate than the streams that flow eastward, is proof that the Pacific is better watered than the Atlantic slope. Most of this precipitation occurs during the winter as snow. The snow-fall rapidly increases as we