

## Correspondence.

## House of a New Zealand Chief.

To the Editor of the SCIENTIFIC AMERICAN :

Allow me to call attention to a slip in your usually accurate paper. In the issue of October 8 the front page has a number of good views to illustrate Mr. Sidney Dickinson's lecture on New Zealand, but the first one, which is entitled "Front of Tribal Assembly House," is nothing of the kind. It is the gable end of a chief's food house or pataka, a structure raised on posts and covered with thatch. The roof projects over the carved end and usually terminates in elaborately carved barge boards. The specimen figured, a very fine one, is now in the Bernice Pauahi Bishop Museum of Polynesian Ethnology and Natural History in Honolulu. WILLIAM T. BRIGHAM, Director.

Bernice Pauahi Bishop Museum, Honolulu, H. I.,  
October 19, 1898.

## Spirit Slate Writing.

To the Editor of the SCIENTIFIC AMERICAN :

Your exposés of tricks as practiced by spiritual fakes have been observed, and I am sorry to say that I believe you stopped too soon, if the prime object was to enlighten the people, for I have the best of reasons to believe that in no other way can that matter be given than through the sheets of your publication, for as such they will be accepted as worthy of consideration by at least those who will reap the most benefits from your articles. I do not think that there is any one person who can fully grasp the extent that the so-called spiritual manifestations are practiced in this country. Salem, Ohio. F. F. R.

[We have so many letters commending Mr. Robinson's series of articles on "Spirit Slate Writing and Kindred Phenomena" that we have decided to publish the manuscript in book form, most of the work being unpublished. It gives us pleasure to announce that the book is now in press and will be published by the time this paper is issued.—ED.]

## The 12-inch Versus the 13-inch Gun.

To the Editor of the SCIENTIFIC AMERICAN :

Although I agree with you most heartily in your agitation of the exchange of the new 12-inch gun for the 13-inch in the "Alabama" class, yet it seems to me that in recent comparisons in your paper the power of the 13-inch rifles with which it is proposed to arm the "Alabama" is underestimated.

Let me take, for example, Mr. Shute's letter in your last issue, where he compares the 12-inch British wire gun, with a muzzle energy of 33,020 foot tons, with our 13-inch gun, giving that only 33,627 foot tons energy. This is unfair, because the energy of the English gun is here calculated for smokeless powder and our gun only allowed brown powder. Now, our large guns are being supplied with smokeless powder, and that is what these guns should now be considered as using. The 13-inch gun will then have a muzzle velocity of 2,400 foot seconds, giving a muzzle energy of 43,922 foot tons. Further, Mr. Shute does not think that our gun could be handled nearly as rapidly as his own.

If we take some actual results in the British navy, we find that the best rate of fire for the 12-inch gun is one round in 1 minute 4 seconds, and for the English 13.5-inch gun, one round in 1 minute 27 seconds. Now, our 13-inch gun is 8 tons lighter than the 13.5-inch gun, and, moreover, for the "Alabama" class, it will have a considerably improved mounting and breeching. It seems to me not unfair, then, to take its rate of fire as one round in 1 minute 15 seconds. Now, if we work out on this basis the fire energies per minute for the 13-inch and 12-inch gun, we shall get 35,956 foot tons for the American and 30,956 for the British gun.

Finally, it must be remembered that at normal battle range, say 1,500 yards, the 13-inch rifle would show a considerable proportionate increase of energy over the 12-inch, due to the fact that the lighter shell loses its velocity much more quickly. GEORGE B. MOODY.

Massachusetts Institute of Technology, Boston, Mass.

[It is true that by the use of smokeless powder the energy of the 13-inch gun would be greatly increased, but it would still be considerably less than that obtainable with the new pattern 12 inch gun, and its relative efficiency (obtained by dividing the energy by the weight of the gun) would be very low compared with the new weapon. The English 12-inch gun has a record of 47 seconds between two rounds with a trained crew. Our new gun, on account of the new breech mechanism, will be even more rapid in its fire. Granting the 13-inch would use smokeless powder, the argument is still overpoweringly strong in favor of replacing the 13-inch weapon by the new 12-inch on the "Alabama" class.—ED.]

PROF. VINCENZI has been examining the so-called holy water from a much frequented church in a Sardinian town. It swarmed with microbes, Löffler's bacillus among others. Cultures and inoculations identified the thing, and at the time there were four cases of diphtheria in the place, one terminating fatally.—The British Architect.

## Miscellaneous Notes and Receipts.

The Dutch fishermen observe the precaution of killing the fish caught as soon as they reach the shore, while the French fishermen leave their booty to die of suffocation. It is to be desired that the Dutch custom be generally adopted, not only for reasons of humanity, but also because promptly killed fish will furnish a far better and more relishable meal.

The most recent investigations by Dr. Linden-Kosl have demonstrated that the starting point of the Gulf Stream does not lie in the Straits of Florida, but in the ocean districts between and near the West Indian Islands near Binioni. The quantity of warm water of the Gulf Stream is about sixty times as large as the water contents of all streams of the earth at their mouths.

Production of Baroscopes.—Dissolve 10 grammes of camphor, 5 grammes of saltpeter, 5 grammes of sal ammoniac, in 105 grammes of alcohol (90 per cent) and 45 grammes of distilled water. After filtering, fill glass tubes 2 centimeters wide and 50 centimeters long with this solution, cork up well below and above, seal and fix on boards by means of wire, similar to barometers. The changes of the solution signify the following: Clear liquid, bright weather; crystals at bottom, thick air, frost in winter; dim liquid, rain; dim liquid with small stars, thunder storms; large flakes, heavy air, overcast sky, snow in winter; threads in upper portion of liquid, windy weather; small dots, damp weather, fog; rising flakes which remain high, wind in the upper air regions; small stars in winter on bright sunny day, snow in one or two days. The higher the crystals rise in the glass tube in winter, the colder it will be.—Neueste Erfindungen und Erfahrungen.

To Protect Lead Pencil or India Ink Sketches.—The above drawings are protected from blurring by coating them with collodion to which two per cent of stearine from a good stearine candle is added. Lay the drawing on a glass plate or a board, and pour the mixture over, in the same manner in which the photographer treats his plates. After 10 to 20 minutes the drawing is dry, and entirely white, possessing a dull luster, and is so protected that it can be washed off with water, without fear of injuring it.—Die Kreide.

Remedy for Damp Cellars.—Take old preserve cans and put therein calcium chloride, a pound of this salt sufficing for a large cellar. The same attracts the water from the air, which collects in the cans. This, however, is not poured away, but is evaporated on a strong fire, whereby the salt crystallizes again and becomes fit for renewed use. Especially for potato cellars this process is very serviceable, since the sprouting of the potatoes, though not entirely prevented, is considerably retarded thereby.—Maler Zeitung.

Testing Commercial Chrome Yellow.—Many commercial chrome yellows contain admixtures for producing the right shade, such as lead chromate, clay, barium sulphate, calcium carbonate, calcium sulphate, etc. For analyzing a chrome yellow containing lead chromate, lead sulphate, barium sulphate, calcium sulphate, calcium carbonate, and clay, the following method is proposed: Treat 1 grm. of the finely powdered pigment at a moderate heat with 100 c. cm. of dilute hydrochloric acid in the proportion of 1 to 20, which is added in three installments. Allow to settle and pour the clear liquid through a filter. Wash out with warm water and estimate lime and sulphuric acid in the filtrate. The residuum is, at an ordinary temperature, treated with 50 c. cm. of ammonium acetate solution of 1.04 specific gravity. The solution must be neutral or faintly alkaline at most. Wash out the residuum with warm water. The filtrate, which contains lead sulphate, is brought to dryness in a weighed platinum crucible, and the lead is weighed as sulphate. The residuum from the treatment with ammonium acetate contains lead chromate, barium sulphate, and clay. It is suspended in 50 c. cm. of water and boiled with 25 c. cm. potash lye of 112 grms. of KOH in the liter. The lead chromate decomposes into soluble potassium plumbite and potassium chromate, while barium sulphate and clay remain unattacked and are separated in the usual manner. The chromic acid is estimated in a special portion of the substance, according to Bunsen's iodo-metric method.—M. Willeux, in the Bulletin d'Associété Belge, 1898, p. 163.

## Social Life of Clerks.

Some people say that the private character of an employé should have no bearing upon his relations with his employer; that so long as he does his work satisfactorily it is nobody's business how he spends his time away from the store. This is a fallacious idea, however. In railroads, banks, and other lines of business there is strict watch kept upon the habits of employes, and if they are known to be spending their spare hours in dissipation, it is not long before they are dropped from their positions. Employers know that it is only a question of time when fast living means stealing.—The Keystone.

## Science Notes.

The sanitary authorities of Sutton Surry, England, have gone into the perfume business in an unusual manner, for they are producing lavender on their sewage farm.—The British Architect.

At Stoke Newington, England, the local vestrymen recently rearranged part of the drainage system and constructed a ventilator in one of the streets. They failed to connect the ventilator with the sewer, and quietly awaited developments. To their great delight the result was entirely satisfactory. Letters of complaint regarding offensive odors were numerous, and when public resentment reached a climax, the local authorities complimented the writers on the strength of their imaginations.

Venice without its waters would be a far less picturesque place than it actually is. And such a state of affairs, we are led to believe, may eventually come about. The regular increase in the delta of the Po has been studied by Prof. Marinelli. Comparison of the Austrian map of about 1823 with the records of surveys made in 1893 shows that the mean annual increase during those seventy years has been about three-tenths of a square mile; and from all known data it appears that the total increase during six centuries has been about 198 square miles. The increase is continuing, and the Gulf of Venice is doomed in time to disappear. No immediate alarm need, however, be excited, for Prof. Marinelli calculates that between 100 and 120 centuries will elapse before the entire Northern Adriatic will have become dry land.—London Chronicle.

The berries of the yew have killed many persons, and it is pretty well known nowadays that it is not safe to eat many peach pits or cherry kernels at once. Among the garden plants commonly in vogue which possess a poisonous nature botanists mention the jonquil, white hyacinth, and snowdrop, the narcissus being also particularly deadly—so much so, indeed, that to chew a small scrap of one of the bulbs may result fatally, while the juice of the leaves is an emetic. There is enough opium in red poppies to do mischief, and the autumn crocus, if the blossoms are chewed, causes illness. The lobelias are all dangerous, their juice, if swallowed, producing giddiness, with pains in the head. Lady's slipper poisons in the same way as does poison ivy. The bulbs seem to be the most harmful. Lilies of the valley are also as poisonous. The leaves and flowers of the oleander are deadly, and the bark of the catalpa tree is very mischievous. The water dropwort, when not in flower, resembles celery, and is virulent.

In connection with the recent disastrous ending of the company that established works in Maine for obtaining from the ocean the gold contained in its salts, a statement appears in The Mining Press, of San Francisco, from Mr. Paek, assayer of the United States Mint in that city, concerning his own experiments in this line. He has found gold in the ocean water proper only in solution and amounting to about 0.5 of a grain to the ton—in value about two cents—the gold in the water of San Francisco Bay being probably about twice that amount, though largely in a finely divided state, only a portion being in solution. The quantity of gold and silver actually contained in the ocean water and the possibility of profitably extracting them has long been under discussion. Malaguti and Durocher's well-known experiments resulted in the discovery of silver in water, but no note is made of any gold. Later, in 1872, Sonstadt discovered gold in sea water, and though not stating the exact amount found, he reported it to be less than one grain to the ton of water. In a paper read before the New South Wales Royal Society on this subject Prof. Liversidge estimates the sea water of the coast in that region to contain a very small amount of gold to the ton, namely 0.5 grain.

The "Antarctic" having returned to Tromsø with the Swedish expedition under Dr. A. G. Nathorst, some notes of the results have been published. Bear island was surveyed and a good map was made, which shows that the "old maps are quite incorrect." The geological work was also successful. Previously only carboniferous strata were known, and an old rock without fossils. In this the expedition found fossils showing the age to be Silurian; and, besides, another series was discovered, the age of which is probably Devonian. The geologists also discovered fossils in the "Three Crowns," forming the top of Mount Misery, which will probably prove to be of Jurassic age. The geology of the little island is consequently of great interest. Some new zoological and botanical discoveries were also made. The expedition went as far north as 80° 14' lat., and if it had reached there a little earlier might have easily gone still further north; but it appears that the scientific work of the expedition has been most successful; large geological, botanical, and zoological collections have been made. The geology, botany, and zoology of King Charles Land are now completely known, and important connections between the geology of Spitzbergen and that of Franz Josef Land have been established.