FOREIGN SCIENCE.

Teeth of the Arabs.

At a late sitting of the Societe Medicale du Pantheon, Dr. Quantin read a paper on dental hygienics among the Arabs. Their teeth are always remarkably white, a circumstance which the author attributes to the almost exclusive use of couscousson as an article of food, and of coffee without sugar as a beverage, besides water. But this is not all; the Arabs rinse their mouths several times at the beginning of each of their four daily ablutions, and thereby any small alimentary particle that may have stuck between the teeth is carried away. They also chew, about once a week, a bit of bark of a tree, called *soodt*, and which seems to be akin to the walnut tree: the bark must not, however, be chewed till it is reduced to the consistency of a pulp, but, when softened by the saliva, it is taken out, the teeth are rubbed with it, and then wiped with the burnous, which is white.

A New Fire Alarm.

The *Union Medicale* has a paper by Dr. Duffay on a curious and useful invention, due to the ingenuity of a celebrated ex-conjuror, M. Robert Houdin. The object in view is to give the alarm of fire at the very commencement of the threatened catastrophe, and the following description will show how this is accomplished:—Suppose a copper lamina and a steel one to be soldered together by their surfaces, so as to form a single blade, copper on one side and steel on the other. Let it be fixed vertically by one of its extremities to a board, without, however, quite touching it, in order to avoid all friction. The arrangement will be best understood by supposing a knife to be brought close to the board, as it with the intention of cutting it through. Now suppose a metal knob to be fixed on the board, on the steel side of the blade, and at a short distance from it. This knob is connected with one of the poles of a voltaic battery, the other pole of which communicates with the screw which secures the fixed extremity of the blade, and with one of those bells or alarums which we see used in the telegraph offices to prepare the clerks for the reception of a message. Now let the blade be warmed—as the dilation of copper by heat is greater than that of steel, it follows that the blade will be bent, the concave side being the steel one; and if the heat applied be sufficient, a contact will be effected between the blade and the knob. No sooner does this take place than the bell begins to ring, and continues doing so until the contact is interrupted. A very small degree of heat will be sufficient to produce the requisite curvature of the blade; even a burning cigar will do so at a distance of about three inches.

Value of Ants.

It has often been asked what ants are chiefly good for, especially the termites, which are the terror of the inhabitants of tropical countries. The *Cosmos* answers the question by stating, on the strength of the testimony of a traveller recently returned from Western Africa, that the equatorial regions would be uninhabitable were it not for the ants that are constantly engaged in clearing away all putrescible matter. Their number is incalculable, and their voracity astonishing. The hives they build themselves in Liberia are, in an architectural point of view, far superior in appearance to the huts of the negroes: they are in the shape of pyramids, sometimes thirty feet high, and upwards of ten feet in diameter.

Rain.

While Western Europe had been drenched with rain throughout the summer, it appears from the latest accounts that they have been eleven months without either rain or snow at Pekin. This is, in China, a great public calamity, which is sought to be averted by fasting, prayer, and expiatory ceremonies. In the summer of 1864, the drought was so great that the Emperor himself made a vow "to rectify his conduct and be more anxious for the welfare of his people."

Amber.

This word is derived from the Arabic. The well-known substance so called is a fossilized resin of certain unknown coniferous trees, of the fir or pine genus. Great virtues are attributed to it by the ancients. Pliny tells us that Sophocles held amber to be the petrified tears which the birds of Meleager dropped to the memory of that great hero of mythology. Amber has been among the moderns a subject of great discussion. The mystery in which it was involved was increased by the circumstance that Hebrew and Arabic characters were often found engraved upon it, in a perfectly legible state. Dr. Thomas, of Kœnisberg, has given us the explanation of this singular fact by stating that the pieces of amber so engraved were neither more or less than seals. Many of them are preserved in the Museum of Portici, but chiefly brought thither from Herculaneum. It is certainly astonishing that, having invented seals, the Romans should not have followed up the idea, and invented some sort of printing process for their writing. Never was there a broader hint given to man, and yet it took a thousand years to bridge over the gulf which lies between two seals and movable types. The largest known deposit of amber lies on the Prussian coast of the Baltic; it is found in a bed of lignite, which is supposed to extend far under the sea. Another deposit of amber lies almost horizontally on the outskirts of Dirschheim, at a depth of only four feet from the surface. Pieces of amber are often found lying on the coast after a storm; thus, on the 1st of January, 1848, upwards of 400 kilos. of this substance were thrown out of the sea within a very small space. Amber has been known from the highest antiquity, and important medical properties were attributed to it; even now it maintains its place in our pharmacopœias, together with the oil distilled from it, as a stimulant, an astringent, and anianti-spasmodic. Amber necklaces have been found in Celtic tombs both in England and Brittany. Regnard tells us that in his time the Margrave of Brandenburg presented the Emperor of Russia with an arm chair entirely of amber, and the Dauphin with a mirror of the same material.

Gas from Coffee.

At a late meeting of the Paris Academy of Science, M. Babinet read a paper on the evolution of gas in the making of coffee. If cold water be poured upon roasted coffee reduced to powder, such as is generally used with boiling water, a considerable quantity of gas is generally evolved. This gas is probably air, and is equal in volume to that of the coffee used. If a bottle be half filled with the powder, and cold water be poured in until the cork is reached which is to prevent the escape of the gas, a violent explosion, sufficient to force the cork out of the bottle, or even to break the latter, will be the consequence.

The Meteors.

M. Faye, in a communication to the Paris Academy of Sciences, in references to the November meteors, says that the phenomenon had been declining since 1833, but had reappeared in its former splendor since 1864. Its return was predicted for the night of the 13th by Mr. Newton, of the United States. M. Faye witnessed it at 1 o'clock after midnight, and consequently on the morning of the 14th. In the course of thirty minutes he counted eighty-one stars in about one-fourth of the heavens, the rest being cloudy. From three to forty-five minutes past that hour he only counted forty-five stars. Most of them came down diverging from the upper part of the constellation of Leo. M. Faye is of opinion that the mechanical part of the problem may soon be solved, owing to the astronomical regularity of the recurrence of the phenomenon; and he mentions a peculiarity remarked by himself, and which may be of some use in paving the way to that desirable end; it is this, that, as regards the 11th of August, the planes in which the tangent to the earth's orbit lies, together with the points of divergence of the periodical meteors of the 20th of April, the 10th of August, and the 13th of November, are all very nearly perpendicular to the plane of the ecliptic. The same is the case with the meteors of the 2d of January, the periodicity of which has been suspected. On the contrary, the corresponding planes for the meteors of the 10th of April, the 19th of October, and the 12th of December are all very nearly parallel to the ecliptic. Hence it follows that the meteoric rings of April, August, and November, which are periodical, are nearly circular, like the earth's orbit.

Cockchafers.

The *Nouvelliste*, of Rouen, states that the Council General of the Department of the Seine-Inferieuse, having this year voted a sum of 15,692f. for the destruction of the white larvæ of the cockchafers, no less a quantity than 157,000 kilogrammes of them were collected from the 15th of September to the 21st of October last. The paper from which we take this statement, adds:—"In order to form an idea of the mass represented by the above weight, we may say that these 157 tons would, at the rate of five tons per railway truck, fill 32 such vehicles. Moreover, since these larvæ have been buried in ditches filled with quicklime, they will form an excellent manure, the value of which will be an ample equivalent for the outlay. Had these larvæ not been destroyed, the ravages they would have committed on the roots of corn, cabbage, and other produce, might be estimated at several million of francs, their voracity being inconceivable. Had they afterwards arrived at the perfect state, that is, become cockchafers, they would have continued their ravages under another form, devouring the leaves of the trees, to which they sometimes cling in heavy clusters, sufficient to bend the twigs. Supposing half of them to be females, and each female to lay only 200 eggs, which is far short of the reality, the ruin entailed upon the agriculturist would be almost complete."

Consumption.

Dr. Churchill, whose discoveries in the treatment of pulmonary consumption have obtained for him one of the highest places among contemporary physicians, has just published a small work containing, in a condensed form, a series of documents on the subject, including reports of cases of consumption cured by the use of the hypophosphites, by a large number of physicians belonging to different countries. Two simple facts will show the importance of such a subject. On the one hand consumption is the most fatal of all diseases, as it kills no less than one-half of the whole number of persons who die in the prime of life. On the other hand, Dr. Churchill asserts that the general use of his treatment, which is not only a remedy, but also a preventative, would do for consumption what vaccination has done for small pox, reduce its ravages to comparatively insignificant proportions. In support of this view the author points with justifiable satisfaction to the fact that, ten years ago, the announcement of his discovery of a specific remedy for consumption was received with derision or incredulity, but that now his treatment is universally recognized as one of undoubted value, and far superior to anything hitherto known. He shows that the reason why his views are as yet only partially adopted by the profession is, independently of the proverbial slowness of all medical progress, the fact that many physicians have neglected to follow the rules he has laid down, and have thus failed in cases where they might have been successful if they had had greater experience and practice in the use of the remedy.

The Daimios of Japan.

The *London and China Telegraph* says:—

"Among the several daimios who are becoming known to fame, Satsuma and Choshiu occupy the foremost rank; and, owing to the great interest now taken in Japanese politics, their names have already become 'familiar in our mouths as household words.' The notoriety acquired by the last-named Prince is indeed of a somewhat unenviable character, being derived chiefly from a series of unfortunate collisions with foreign powers and from the prominent part taken by him against the late Tycoon, or, more properly, Shiogoon, in the civil war which we may suppose has just been terminated by the death of that potentate. At present we know so little of the personal character of Choshiu that the opinions which have been hazarded regarding the motives of his apparently unreasoning acts of aggression against the treaty powers, and his successful rebellion against the Shiogoon's supremacy, are perhaps premature; and it may be that, on establishing closer relations with this prince, we shall find he has been more sinned against than sinning, and shall, therefore, have reason to form a more favorable estimate of his character.

"Of Satsuma, however, we have had better opportunities of judging. Our acquaintance with him could not well have commenced in a more inauspicious manner than it did; but whatever vengeful feelings the unhappy fate of Mr. Richardson naturally excited were soon subdued by the reflection that, after all, Satsuma himself could not justly be held personally responsible for the outrage. The gallant bearing of the defenders of Kagosima during the operations that followed could not fail to win our respect; and the spirit of true charity and unreserved forgiveness since evinced by the daimio would have done honor to any Christian prince. The cordiality of his invitation to Sir Harry Parkes to visit Kagosima, and the unbounded hospitality received there by Sir Harry and his companions, are not the only evidences of this. A still more valuable testimony is contained in the statement of the three survivors from the wreck of the Cyclone, lately cast away on the rocky shores of Satsuma's domain: 'The Prince was most kind to us, supplying us with clothes and whatever else we required. We were never without guards, and wherever we went we were treated kindly. We cannot refrain from testifying our sincere thanks for the kind manner in which we were treated, which we shall ever bear in remembrance.' It is to be hoped that measures will be taken to let Prince Satsuma know that the gratitude expressed in the simple words of these poor sailors is fully shared in by their countrymen."

How a Man Freezes to Death.

M. Pouchet lately read an interesting paper on this subject before the French Academy of Science. The author's inferences are as follows:—

1. That the first phenomenon produced by cold is a contraction of the capillary vessels to such an extent that a globule of blood cannot enter. These vessels, therefore, remain completely empty.

2. The second phenomenon is an alteration of the blood globules, which amounts to their complete disorganization.

3. Every animal completely frozen is absolutely dead, and no power can reanimate it.

4. When only a part is frozen, that part is destroyed by gangrene.

5. If the part frozen is not extensive, and only a few disorganized blood globules pass into circulation, the animal may recover.

6. But if, on the contrary, the frozen part is of considerable extent, then the mass of altered globules brought into the circulation when the part is thawed rapidly kills the animal.

7. For this reason a half-frozen animal may live a long time, if maintained in this condition, since the altered globules do not get into the circulation, but it expires rapidly as soon as the frozen part is thawed.

8. In all cases of congelation, death is due to the alteration of the blood globules, and not to any effect on the nervous system.

9. It results from these facts that the less rapidly the frozen part is thawed, the more slowly altered globules find their way into the circulation, and the greater the chances of the recovery of the animal.

A Pensioner in Luck.—James Ratcliff, one of the pensioners of the London police fund, has came into possession of funded property to the amount of £125,000, besides an estate which realizes £3000 per annum.