

able. The weight of the brain differed very much according to the age or physical conditions of the person when he died, and there were certain diseases which went to increase the specific gravity. But when the actual capacity of skull was found they had the actual capacity of the brain at the time of health.

There was another very important reason why they laid stress on obtaining the capacity of the crania in preference to the other method. It was because all their museums now contained a number of skulls from different parts of the earth, some of which were very inaccessible to scientific observation, and it was, of course, impossible to ascertain the actual weight of the brains of these people after death.

Then, again, how could they get the capacity of the skull by the weight of the brains in cases where the races had become extinct, such as the Tasmanians, many of the Polynesians, the ancient Britons, and the ancient Irish, and others, specimens of whose skulls they possessed, and by which they could ascertain the capacity of the brain? He supposed he would be expected to say at once whether he attributed any great and direct importance to the weight and age of the brain as an indication of intelligence. Well, he thought it was one of the very many points that had to be considered in this question; but he thought there were a great many other things to be remembered in this view of the question. For instance, many people had large brains and did not know how to use them, and some who knew how to use them did not try to do it. They would see that many of the races that were naturally considered the higher races, and had taken the lead in the civilization of the world, had undoubtedly larger cranial capacities than the peoples who were at the bottom of the ladder of civilization. He would never accept the mere fact of a man's head being large as an indication of superior intelligence, but it was one point to be considered.

The measurement of the skull was not only an important but it was also a difficult work, more difficult in fact than a great many people supposed, and a great many of the uncertain results that had been obtained on this subject were owing to the persons who had taken the matter in hand not having yet discovered the best and most certain method of carrying out the investigation.

A large number of measurements published were only of an approximate value, owing to the numerous fallacies and difficulties experienced in arriving at a satisfactory method of measurement. Nothing, apparently, could be easier than to take a skull and stop the cavities, and pour some fluid into it, and then pour it out and measure it; but they could not do this with the skull, as the bone was very porous and full of minute invisible holes, through which the fluid soaked as it would through a sponge. It was only by making the skull waterproof that they could seek to measure its cavity by a fluid. He had a skull by him which had been so prepared. The large holes had been filled with wax and the skull soaked in melted paraffin, which filled up the minute cavities, and when it was cooled it was as impervious to any fluid as delft. But the materials that had to be used in testing the capacity of the skull must be something solid. Various things, such as shot, grain, etc., had been used. He would pass over the various methods that had been tried and failed, and which would be found recorded in the *Transactions* of the Anthropological Society of Paris, and speak of two methods which, at the present time, meet with the greatest amount of success. One was the method of M. Broca, and the other the method of Mr. Busk. The latter had shown such good reasons for his plan that he thought it particularly safe to try it, and after doing so he had adopted it with some modifications. He filled the skull with mustard seed well shaken, and pressed in with the thumb, and then poured the seed into a long wooden box with glass sides, in which it was well shaken and pressed down. The figures on the glass indicated the spaces filled. This he thought was the most satisfactory way as yet invented, and they could hardly hope for better. He always kept his experimental skull by him when measuring other skulls, in order that he might occasionally go back to it to see if he had gone wrong.

Now, as to the measurement of the skulls of the different races of the human family, a very important point to consider, and a very difficult one, was the sexes, because there was a great difference in the size of the skulls; a much greater difference than there was between men of different races. To get the average of any race they must get a large number of skulls, and he must say their collection was very insufficient at present. According to a comparison between the skulls of sixty-three men of various races, and skulls of twenty-four women, the ratio of the woman's skull to the man's was as 854 to 1,000. The largest no mal skull he had ever measured was as much as 2,075. He knew nothing of its history. It might have been the head of a great philosopher, but unfortunately they were not in the habit of getting the heads of philosophers in their museum. Nearly all the English skulls were those of persons in the lowest ranks of life. It was these they had to compare with the specimens of other races. The smallest head he had measured was 960 centimeters, and that belonged to one of those peculiar people in the center of Ceylon, who were now nearly extinct. The largest average capacity of any human head he had measured was that of a race of long, flat headed people on the west coast of Africa. The Laplanders and Esquimaux, who were a very small people, had very large skulls. The latter gave an average measurement of 1,546. He then came to the English skull, which was nearly the

same size—1,542; but, as he had said, they belonged to the lower grades of English skulls. He could not tell them anything about Irish skulls, for there was not a single specimen of the Irish skull in any London museum. The inhabitants of the Canary Islands give a capacity of 1,498; the Japanese, 1,486; the Chinese, 1,424; the modern Italian, 1,475; the ancient Egyptian, 1,464; the true Polynesians, 1,454; negroes of various kinds, 1,377; the Kaffirs, 1,348; Hindoos, 1,306. They then came to the Australian aborigines, who were among the smallest, only giving an average of 1,283. There were two races still below the Australians, namely, the Andamanese, who were a very diminutive people, with a capacity of 1,220, and the Veddahs, of Ceylon, who had an average skull.

The President (Professor Huxley) said he might, without hesitation, offer the best thanks of the Section to Professor Flower for the important and interesting paper he had just read. Persons not ordinarily occupied with scientific pursuits might not be aware of the amount of care that had to be taken when it was desired to do any good in scientific matters in obtaining data, which data would, when obtained, pack into the very smallest possible results. It would be seen what care was required to obtain measurements of the cubical contents of the skulls, and yet the whole of the labor, if Mr. Flower published his paper, as he hoped he would, would go into the space occupied by the three or four rows of figures. There was one very interesting question he wished to put to Mr. Flower—whether it was possible to establish not only a series of absolute measurements of the capacities of the skull, but also some kind of index of capacity in which can be expressed the ratio of capacity of the skull to the stature of the person to whom it belonged; or if it was impossible to obtain that, yet even to obtain such data as would show the relation between the contents of the skull and the length of the part of the skull which was, as it were, the foundation of the skull.

Paper Fiber from Woods and Plants.

According to the experience of the paper manufacturers, De Naeyer & Co., of Belgium, different sources of paper fiber furnish the following percentages:

WOODS.		
Common Names.	Scientific Names.	Yield Per Cent.
Heath.....	Erica vulgaris.....	27.14
Filbert trees ..	Corylus avellana	31.50
Alder	Alnus glutinosa.....	34.30
Bamboo.....	Bambusa thonarsu.....	34.82
White pine.....	Abies pectinata	34.60
Horse chestnut.....	Æsculus hippocastanus.....	33.26
Oak	Quercus robur	29.16
White poplar ..	Populus alba.....	35.81
Red pine.....	Pinus sylvestris rubra	32.28
Elm.....	Ulmus campestris.....	31.81
Ash.....	Fraxinus excelsior.....	32.28
Black alder.....	Rhamnus frangula	37.82
Fir	Pinus sylvestris.....	35.17
Osier.....	Salix alba.....	29.50
Canadian poplar.....	Populus Canadensis.....	36.88
Beech.....	Fagus sylvatica.....	30.90
Pitch pine.....	Pinus Australis.....	31.08
Walnut.....	Juglans regia	26.52
Willow	Salix alba.....	37.82
Birch.....	Betula alba.....	33.80
Italian poplar.....	Populus Italica.....	36.12
Acacia	Robinia pseudoacacia	34.10
Lime tree.....	Tilia Europea	38.16
Rattan	Calamus verus.....	29.19
Aspen tree	Populus tremula.....	35.00

HERBACEOUS PLANTS.

Camelina	Camelina sativa	29.16
Bent grass	Agrostis spica venti.....	45.82
Buckwheat	Fagopyrum esculentum.....	30.60
Marsh rush.....	Scirpus palustris.....	41.70
Banana	Musa ensete.....	31.81
Mateva.....	Hyphæne Thebaica	26.08
Oats.....	Avena sativa	35.08
New Zealand flax ..	Phormium tenax	32.71
Asparagus stalks.....	Asparagus officinalis	32.56
Marsh grass.....	Glyceria aquatica	38.80
Maize.....	Zea mays	40.24
Reed.....	Phragmites vulgaris	41.57
Canna	Canna	20.29
Rye.....	Secale cereale.....	44.12
Giant nettle.....	Urtica dioica	21.66
Sugar cane.....	Saccharum officinarum.....	29.15
Barley.....	Hordeum vulgare	36.21
Sedge.....	Carex	33.86
Wheat.....	Triticum sativum.....	43.14
Fromenteau.....	Baldengera Arundinacia.....	46.17
Blue flag.....	Enodium cœruleum.....	40.07
Hop.....	Humulus lupulus.....	34.84
Canary grass.....	Phalari Canariensis.....	44.16
Wild broom.....	Spartium scoparium.....	32.43
Dog's grass.....	Triticum repens.....	28.38

The Whitehead Torpedo in Battle.

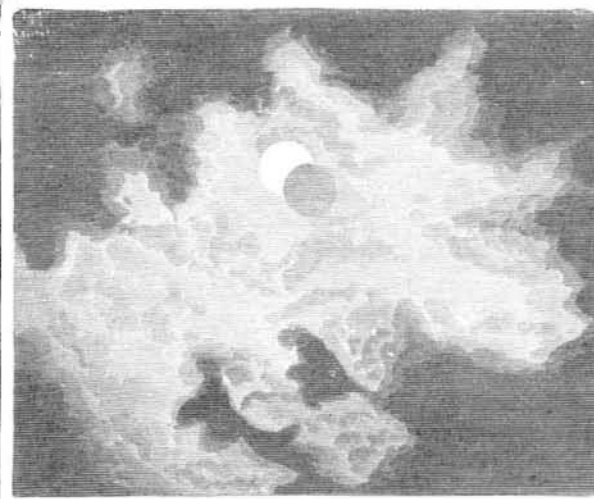
Admiral Po ter, U.S.N., has but small regard for the torpedo most approved by European authorities. In his article on torpedo warfare, in the September number of the *North American Review*, he says:

"To show the unreliability of the Whitehead torpedo, I will refer to the engagement between the Peruvian ironclad

Huascar and two British men-of-war. The Shah, one of the latter, sent a fish torpedo against the Huascar, which, seeing bubbles of air rising to the surface, avoided the machine, and it ran straight into a harbor near by; there, the compressed air being gradually expended, the torpedo rested quietly alongside a Dutch merchant vessel at anchor, with no power to do harm. The Dutch captain, seeing what he supposed to be a live fish alongside, got out his fishing tackle, but was disgusted at not getting a bite; only after several unsuccessful attempts with a harpoon did he discover the nature of his visitor. The Whitehead may, under certain circumstances, be a destructive instrument, but, owing to its erratic movements, it is liable in the heat of battle to prove dangerous to its friends. The torpedo vessel will, in the end, I am convinced, prove a most effective and certain means of offense, as its movements are at all times under the entire control of its commander, who can select his own time for attack and retreat."

THE RECENT ECLIPSE OF THE SUN.

Our engraving is from a photograph of the eclipse taken July 29 by Mr. J. E. Ender, of Yorkville, Ill. The photograph itself is a beautiful specimen of the art; and although



our engraver has done very well, still the picture does not show the delicate and interesting gradations of light which the original presents.

ASTRONOMICAL NOTES.

BY BERLIN H. WRIGHT.

PENN YAN, N. Y., Saturday, October 5, 1878.

The following calculations are adapted to the latitude of New York city, and are expressed in true or clock time, being for the date given in the caption when not otherwise stated.

PLANETS.

	H.M.	H.M.
Mercury rises.....	4 54 mo.	Saturn in meridian..... 11 00 eve.
Venus rises.....	4 45 mo.	Uranus rises..... 2 43 mo.
Mars rises.....	5 34 mo.	Neptune rises..... 6 45 eve.
Jupiter sets.....	11 43 eve.	Neptune in meridian..... 1 34 mo.

FIRST MAGNITUDE STARS, ETC.

	H. M.		H. M.
Alpheratz in meridian.....	11 03 eve.	Procyon rises.....	0 19 mo.
Mira (var.) rises.....	7 27 eve.	Regulus rises.....	2 22 mo.
Algol (var.) in meridian.....	2 05 mo.	Spica	invisible.
7 stars (Pleiades) rise.....	7 13 eve.	Arcturus sets.....	8 24 eve.
Aldebaran rises.....	6 32 eve.	Antares sets.....	7 44 eve.
Capella rises.....	6 00 eve.	Vega in meridian.....	5 35 eve.
Rigel rises.....	10 39 eve.	Altair in meridian.....	6 47 eve.
Betelgeuse rises.....	10 24 eve.	Deneb in meridian.....	7 39 eve.
Sirius rises.....	0 44 mo.	Pomalhaut in meridian.....	9 52 eve.

REMARKS.

Saturn will be about 7° south of the moon early in the evening of October 9.

To the amateur telescopist it will be interesting to observe Jupiter's satellites October 9, from 6h. 55m. evening to 10h. 34m. evening. At 6h. 55m. evening the first begins a transit, and with small telescopes seems to disappear at Jupiter's eastern limb, larger ones being able to follow it in its passage across the disk. At 8h. 14m. its shadow also crosses the eastern limb, and follows the course of the satellite, and may be seen with a telescope of very ordinary power and aperture. At 9h. 15m. the satellite emerges from the western limb, and its shadow 1h. 19m. later. At 10h. 34m. evening, his satellites will be disposed as follows: The first is close to the western limb, its apparent motion being from the planet; the second is three times as far east as the first was west, and is approaching the planet; the third is twice as far east as the second, and moving from Jupiter; while the fourth is almost at its greatest distance from the planet east, being about four times the distance of the third and nearly stationary.

Roasted Table Salt in Intermittent Fever.

Les Mondes quotes from a Marseilles medical journal a simple remedy for periodical fevers, which has been used very efficiently for many years by Dr. Brokes in his journeys in Hungary and America.

The directions are to take a handful of powdered white salt, such as is used in kitchens, and roast it in a clean stove (new, if possible) with moderate heat till it becomes of a brown color, like that of roasted coffee. The dose for an adult is a soup-spoonful dissolved in a glass of warm water, taken at once. It should be stated that when the fever makes its appearance at intervals of 2, 3, or 4 days, the remedy should be taken fasting, on the morning of the day following the fever. To overcome the thirst excited by the salt, but a small quantity of water should be taken through

a straw. During the forty-eight hours which follow the taking of the salt, the appetite should be satisfied with chicken or beef broth only; it is especially necessary at the time to observe a severe diet, and to avoid taking cold. The author asserts that during the eighteen years that he has used this method of treatment, he has never been unsuccessful. The remedy is certainly harmless, and perhaps worthy of a trial.

HOW TO TEST A LATHE.

To test if the cone spindle is parallel with the ways or shears, bore a long hole in a piece of cast iron, using a stout tool holder and a short stiff tool, taking a fine cut with a tool having its cutting edge slightly rounded, with a feed of 16 to an inch, at a speed of 25 feet per minute. Let the tool feed through the hole and back again, so that it may be definitely known that the tool does not spring away from the work. Then, without moving the tool from the cut, wind the tool to the entrance of the hole, and let it stand there while the lathe runs forty or fifty revolutions. Traverse the tool to the other end of the hole, and let it stand while the lathe runs again. Then stop the lathe and traverse the tool (without taking it from the cut) along the hole, and if it marks a line stronger at one end of the hole than at the other, the tool has sprung and another fine cut must be taken as before, but if not, and the hole is parallel, the spindle is true.

To avoid the wear of the tool it must be made as hard as possible. If the cut was started at the front and the hole bored is smallest at the back, another cut should be taken, commencing at the back and feeding toward the front. If the hole is still smallest at the back, the lathe cone spindle is not parallel with the ways.

To determine whether the cross slide is at a right angle with the ways or shears, take a fine cut over a radial face, such, for example, as the largest face plate, and test the finished plate with a straight edge. If the face plate runs true and shows true with a straight edge, so that it is unnecessary to take a cut over it, grind a piece of steel a little rounding on its end, and fasten it in the tool post or clamp, with the rounded end next to the face plate. Let the rounded end be about $\frac{1}{4}$ inch away from the face plate, and then put the feed motion into gear, and, with the steel near the periphery of the face plate, let the carriage feed up until the rounded steel end will just grip a piece of thin paper against the face plate tight enough to cause a slight strain in pulling the paper out, then wind the tool in toward the lathe center and try the friction of the paper there; if equal, the cross slide is true.

In taking a cut down a radial face, to test the truth of the cross slide of the rest, the cut should be started from the periphery, for the following reasons: It is obvious that to some degree (however slight it may, under careful manipulation, be) the tool will become dulled as the cut proceeds. Now with an equal depth of cut, and under equal conditions, there is more strain and wear upon the tool edge when cutting the larger than when cutting the smaller diameter. Suppose, for example, that in the figure we have the radial face, A A, and that the tools, B and C, are each taking off a cut of $\frac{1}{8}$ inch deep having an equal feed; then from the lines, D E, we may perceive that the metal in the act of being severed by the tool, B, is much better supported by the metal behind it than is the metal being severed by C, and it follows that by beginning the cut at the outer diameter the strain upon it will get less, while the tool edge becomes duller, hence better results will be obtained than if the duty increased as the tool edge dulled.

To test the workmanship of the back head or tailstock, place the forefinger on the spindle close to the hub whence it emerges, and observe how much the hand wheel can be moved without moving the spindle; this will show how much, if any, lost motion there is between the screw and the nut in the spindle. Next wind the back spindle as far as it will go, take hold of the dead center and pull it back and forth, when an imperfect fit between the spindle and the hole in which it slides will be shown by the lateral motion of the dead center. Wind the dead center in again, and tighten and loosen the spindle clamp, and see if doing so moves the spindle in the socket. Wind the dead center out again and slide the tailstock up the lathe bed until the dead center nearly touches the live one, and after bolting the tailstock to the lathe bed, bring the center points close together and see if they coincide. If the tailstock sets over for turning tapers, the setting screws may be operated to adjust the centers.

In any event, the lathe centers should be of equal height, or the lathe will not turn true. It is as well to turn the back center partly in its socket while making this test, so as not to be deceived by any want of truth in the back or dead center.

To examine the slide rest, move the screw handles back and forth to find how much they may be moved without giving motion to the slides; this will determine the amount of lost motion between the collars of the screws and between the screws themselves and the nuts in which they operate. To try the fit of the movable slides in the stationary sliding ways or Vs, remove the screws and move the slide so that only about one half inch is in contact with the Vs,

then move the slide back and forth laterally to see if there is any play. Move the slide to the other end of the Vs, and make a similar test, adjusting the slide to take up any play at either end. Then clean the bearing surfaces and move the slide back and forth on the Vs, and the marks will show the fit, while the power required to move the slide will show the parallelism of the Vs.

If the lathe carriage has a rack feed, operate it slowly by hand, to ascertain if it can be fed slowly and regularly by hand, which is of great importance. Then put the automatic feed in gear, and operate the feed gear back and forth, to determine how much it can be moved without moving the slide rest. To test the fit of the feed screw to the feed nut, put the latter in gear and operate the rack motion back and forth. It has been assumed in this method of testing that means of adjustment are provided whereby any play in the cone spindle bearings may be taken up. J. R.

THE STYLOGRAPHIC PEN.

For several years past Mr. A. T. Cross, a pen and pencil manufacturer of New England, has been engaged in perfecting a fountain pen, or more properly an ink pencil, which as now given to the public is certainly very useful and perfect. The holder or case, of vulcanized rubber, ornamented and beautifully mounted, contains the ink, which is conveyed by capillary attraction to the point, whence it flows easily and freely, in uniform and unshaded lines, over the paper.

For the past few weeks we have had some of these pens in practical use in the SCIENTIFIC AMERICAN office, and their working has so far proved very satisfactory. They write more smoothly and easily than a lead pencil, and can be used with facility upon any kind of paper. For long continued writing it is certainly a great convenience to take up one of these pens and be able to write page after page, for a whole day at a time, without being obliged to lift the hand from the paper, or resort to the inkstand, or change a pen, or sharpen a pencil. Our cut shows the exact size and form of the pen. Further information may be obtained from the New York general agent, Mr. C. W. Robinson, No. 107 Duane street, New York, or Mr. M. R. Warren, No. 21 Milk street, Boston, Mass.



An Accident on the Mt. Washington Railroad.

The machinery for arresting the motion of a train in case of accident on the Mount Washington Railroad was happily tested, not long since. While a train was ascending the mountain the rear driving wheel of the engine broke, whereupon the ratchet brake on the forward driving shaft of the engine was instantly applied, stopping the train so quickly and firmly that its movement backward down the slope was less than four inches. There were about seventy passengers on the train, and but few of them suspected that an accident had occurred before the train was stopped. No one was hurt.

London Lichens.

Hitherto the discoloration of London buildings has been chiefly attributed to the prevalent smoke and soot of the atmosphere of the city. It has been noticed, however, that other towns, with an atmosphere equally vile, and using the same sort of stone for building purposes, did not suffer in the same way; while, on the other hand, in places entirely out of the range of London smoke and soot, certain walls became as black as those of St. Paul's. These contrary conditions led Professor Paley to suspect that the discoloration might be of organic origin; accordingly he has made a careful study of the matter, resulting in the conviction that the mischief maker was in reality a minute lichen, irregular in shape and extremely low in organization. It thrives best on certain oolitic limestones much used in London, in warm shady places. The problem now is to find some means for killing and preventing the return of the lugubrious nuisance.

A Promising Western Town.

A correspondent of the *Daily Bulletin* prefaces a long account of the growing industries of Minneapolis, Minn., with the remark that Horace Greeley said, ten years ago, that the child was then living who would see the day when mills at the Falls of St. Anthony would produce more cotton goods than the mills of Manchester, and more woolen goods than the mills of Leeds. This was a big prophecy indeed, but as at that time Minneapolis and the village of St. Anthony, surrounding those falls, contained only about 15,000 inhabitants, and was a small manufacturing town, and has since swelled into a city of 47,000 inhabitants and become the largest flour milling city in the United States, and is still rapidly increasing its prominence in every respect, the prophecy was not so wild as it might seem; and its truth may yet be realized. It is not alone, however, the milling interest that has made Minneapolis. The one hundred thousand available horse power that has not yet been utilized is left after over 8,000 horse power of water has been used

by nineteen flouring mills with 214 run of stone; a large woolen mill, manufacturing some of the finest blankets and cassimeres in America; a cotton mill making seamless bags, yarn, etc.; three iron works, a railroad machine shop, a mill machinery works, several planing mills, sash factories, two paper mills, two machine shops, a carding mill, a 300,000 bushel grain elevator, the city water works, twenty saw mills, many with immense gang saws, double circulars, etc.

Where Our Hardware Goes.

A correspondent of the British *Ironmonger* has been examining the monthly reports of our Treasury Department to see what becomes of exported hardware. He finds the destination of some of the principal articles to be as follows:

Nails are sent chiefly to Great Britain, Germany, France, Danish West Indies, British West Indies, Porto Rico, Cuba, Africa, British Guiana, Hayti, Colombia, Brazil, Mexico, Australia, New Zealand, and Canada.

Cutlery is sent chiefly to Great Britain, France, Cuba, Honduras, British Guiana, Columbia, Brazil, Mexico, Venezuela, and Australia.

Pumps are sent chiefly to Germany, Great Britain, France, Cuba, Columbia, Brazil, Venezuela, Australia, Mexico, New Zealand, Sandwich Islands, the East and West Indies, China, Japan, and many other countries.

Machinery is sent to Great Britain, Germany, France, Cuba, Hayti, San Domingo, all the South American States, Mexico, Central America, all parts of Europe, Africa, Australia, China, Japan, and elsewhere.

Articles classed as general hardware go to Great Britain, Norway, Sweden, Denmark, France, Germany, Spain, Italy, Russia, British North America, West Indies, East Indies, British colonies in Africa, British Guiana, China, Japan, all the South and Central American States, Australia, New Zealand, and many other countries.

Agricultural implements, clocks and watches, firearms, and many other manufactures, seem to go in greater or less amounts to nearly every country of the world.

Filtration of Sea Water through Sandstone.

Mr. Isaac Roberts, at a recent meeting of the British Association, stated that he was led to investigate the effects produced on sea water by filtration, in consequence of the constantly increasing salinity of the water drawn from several wells in Liverpool, which are sunk below the sea level in the Bunter sandstones of that locality. He found that one of the wells, which he selected as the type of the rest, yielded water which increased in salinity at the rate of 4.91 to 5.81 per cent annually, and inferred that the sandstone rock had the power of removing salts out of sea water. To prove this he filtered sea water through blocks of the sandstone, and found the inference to be greatly borne out by the results of his experiments. Two cubic feet of the stone removed, from the first filtrate of $3\frac{1}{2}$ fluid ounces of the water, 80.8 per cent of the salts held in solution, and each measured quantity of four ounces, which were afterward filtered through, regularly showed an increase of the salts in solution, until $93\frac{1}{2}$ fluid ounces had filtered through the stones. Then these ceased to be operative as filters, and the waters passed through unchanged. After allowing the stones to dry he passed the spring water through them, and found that the salts which they had taken up were again removed and washed out, thereby showing the action to be mechanical.

Miss Hosmer's Improved Sculptor's Model.

In a very appreciative account of Harriet Hosmer's "Sentinel of Pompeii," the *London Times* describes the ingenious method by which that artist overcomes the difficulties attending the use of clay models and casts. "To get rid of these," the *Times* remarks, "Miss Hosmer has devised the plan, after settling her design in the shape of a small model, of building up a rough model of the figure in plaster of Paris round a strong iron skeleton; on the surface of this she marks the more exact contour, after her small model, by steel points, such as are used in fixing the contour of a marble to be carved from a cast, and then works over the rough plaster, up to the heads of these points, in wax, applied warm, to a thickness varying from an eighth of an inch to nearly an inch, till she obtains the surface she desires, which in texture, color, and effect most closely resembles old marble.

"In this way is obtained a model which can be put aside at any moment and resumed when convenient, which can be preserved without liability to crack or shrink as long as may be desirable, and which bears the living impress of the sculptor's hand, like the clay, without the difficulty of keeping it in working order, and the liability to accident and disaster which beset the clay so sorely. How far these advantages outweigh any difficulties there may be in the preparation or working of the model thus treated, and what other advantages not here indicated the method may have, are, of course, questions for practical sculptors, to whom Miss Hosmer is ready to give full explanation of her new way of working."

In thus breaking through the immemorial customs of the art world, as in her womanly independence and energy, Miss Hosmer illustrates the true American spirit.

The fiber of a variety of the aloe, peculiar to the Mauritius, is reported to be the best known material for ropes. It is said to be very pliant, to exceed in toughness an iron wire of the same size, and to be impervious to the effects of salt water.