

A CHINESE SCIENTIFIC JOURNAL.

There lies before us a very curious periodical. It is a pamphlet of about thirty pages, stitched with green silken covers of the brightest yellow. On the back, or rather the front, for the book is read backwards, there is a strip of bright pink paper, covered with hieroglyphics. The pages are each double, that is to say, instead of the print appearing on each side of the sheet, it is impressed on one side, the sheet is folded, and the free ends bound inwards, so that the edge of every leaf is a fold. The paper is of that soft India variety used here for engravers' first proofs. Finally, the characters are all Chinese and printed in vertical lines. Such is the appearance of the first Chinese scientific journal, the Chinese Scientific Magazine, a page of which the reader has before him in the annexed engraving, reproduced in facsimile

The editor, Mr. John Fryer, of Shanghai, writes us that it is his "ambition to make this magazine to China what the SCIENTIFIC AMERICAN is to every country where the English language is known. My aim is high, but perseverance will enable me to succeed, even if only in a small degree;" and he tells us in his prospectus that the journal is to "serve as an introduction to the translation of scientific books already existing in Chinese; it will contain notes or lectures on scientific subjects," and in brief is intended to disseminate useful scientific and practical information throughout the country. It is published monthly at 50 cents per year and will be illustrated copiously; a specimen of the pictorial embellishments is here shown. We admit our inability to read the letter press, and hence are in the dark as to the table of contents of the present number; but there seems to be an interesting variety of articles (if we may judge from the engravings) relating to the solar system, the seasons, eclipses, etc., a circular saw, a steam hammer, and various other mechanical apparatus.

It may justly be considered that the establishment of this journal—and we trust it may meet with unbounded success—marks another breach in that wall of exclusiveness with which for centuries China has encompassed herself. That country is beginning an era fraught with the deepest significance to all western nations, an era when a great people, capable of high development, undertake to arouse themselves from a lethargy of ages, and, by acquiring the knowledge which the world has learned during their long sleep, to place themselves on a level with the vastly younger nations which have far outstripped them in civilization and progress. In the past the Chinese have been great engineers (as witness the colossal canals, cities, bridges, and temples still existent) and greater inventors, for, very many years before such things were thought of in Europe, they invented the compass, gunpowder, paper, porcelain, and printing. No people have approached them in agriculture, none have so wide a knowledge of the use and value of artificial fertilizers; for centuries past, no matter for the enrichment of the land has escaped their utilization. Moreover they are cunning, even wonderful, we know, scarcely to be approached in the marvellous delicacy of their productions or for the patience with which they attack herculean tasks. In no country is education so highly prized, and among no other people does political preferment depend, as it does in China, almost wholly upon scholastic acquirements. Now all that seems wanting is the extension of that education, beyond the lore of Confucius and ancient tradition, to the world's modern progress; and the barriers to this, so long maintained, China herself is now tearing away. The very vastness of her population is the most serious obstacle to her advancement, even from the single view that the consequent cheapness of manual labor will militate against the introduction of machines for its replacement; but that this in time will be overcome, perhaps through the immense industries which it is possible to establish, or through the development of the great unworked mineral resources of the country, there is no reason to doubt. Chinese students are now all over the world studying the habits and customs of the most advanced people, in order to return and instruct their own countrymen; the first railroad has recently been introduced into the country; and China is organizing a navy of modern ironclad vessels. The signs of progress are everywhere. It is scarcely within the reach of prophecy to predict that the next, if not the present, generation will feel the industrial competition of China, not alone through her emigrants here or elsewhere, but through her own people working within her own borders.

Education in China.

Wong Chin Foo, the Chinese lecturer, was present at the Teachers' Institute of Adams county, Pa., not long ago, and delivered an interesting address on the subject of education in China. He said that the first lessons inculcated in Chinese schools are obedience and reverence for parents and respect for teachers. He claimed that in no country in the world is education so general as in China, and that in no other country are intelligence and moral worth so promptly and so liberally rewarded by the government. He also alluded to the

Great Wall of China, the immense number and size of its walled cities, its palaces and works of art, its canals, and other public improvements, its wars and its civilization, its geography and history, and its systems of religion. He closed with a demonstration of the Chinese method of computation, which was truly wonderful for rapidity and accuracy. By means of an ordinary abacus he performed the most difficult operations in addition and subtraction with the utmost dispatch and correctness, throwing the so called lightning calculators completely in the shade. The lecturer also described the manner and customs of his people, using good English and speaking with but a slight accent. We quote his language, as reported in Home and School; "The capitals of the different divisions of the empire are all walled cities. There are seventy-five thousand of these walled cities in China. The material in these walls is sufficient, in the aggregate, to construct a wall thirty feet high and twenty feet thick entirely round the world, and leave brick and stone enough to build all the houses in the United States besides. This may seem wonderful, but it is true. In China everything is done in a different way from what it is done in this country. The manners and customs of the people are different. In this country when a gentleman enters a parlor or drawing room, or goes into society, he is expected to remove his hat; in ours, he is expected to keep it on. In China it is considered very rude and uncivil to go into company with the head uncovered. In your country, when friends

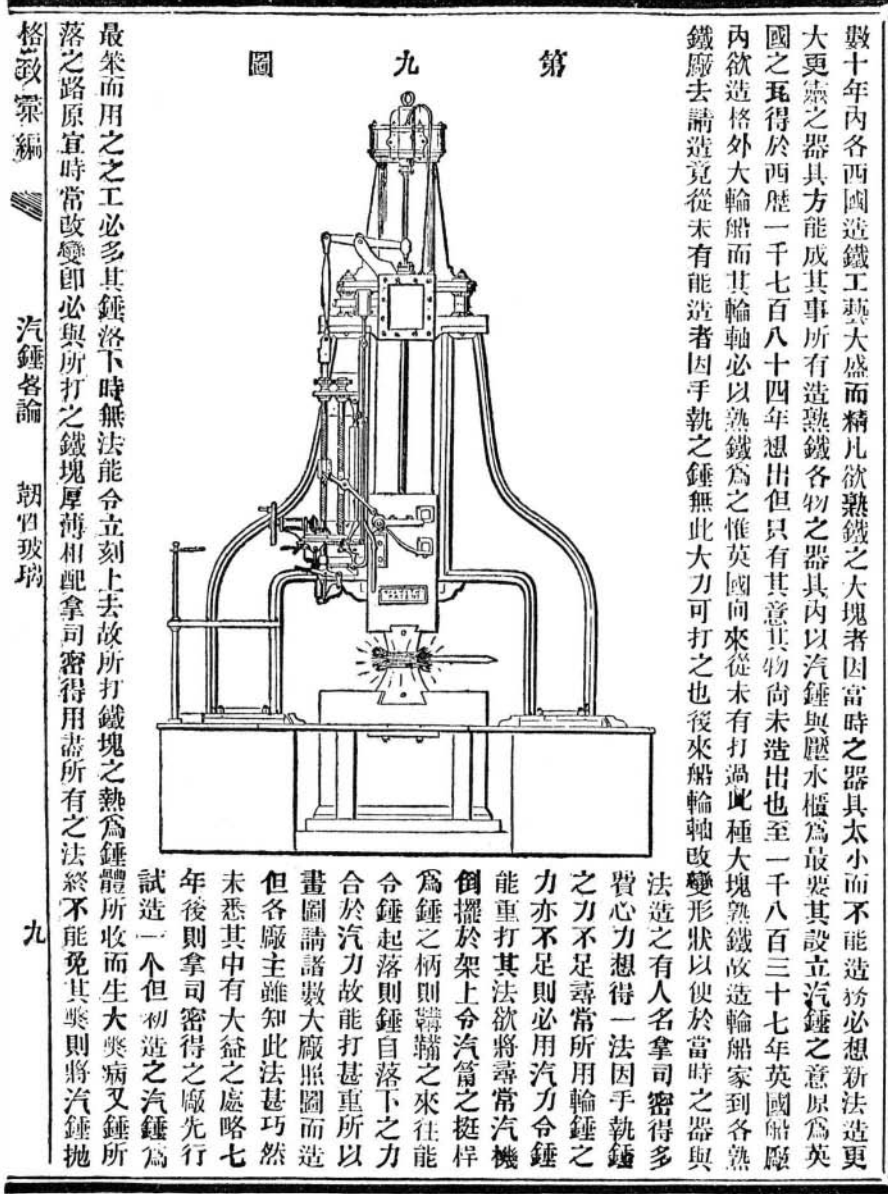
The Origin of Our Earth.

The following curious experiments, recently made by a German observer, M. Sacher, may perhaps be regarded as throwing some light on the mode of origin of our earth.

By mixture of water and alcohol prepare a series of spirit solutions of the following densities: 0.9, 0.82, 0.88, 0.87, 0.865, 0.86, 0.85, 0.83. Into a glass cylinder, or a high, broad beaker glass, pour first some distilled water, then spirit solutions of 0.9, 0.89, 0.88. By careful pouring, the cylinder being held inclined, you may obtain the liquids stratified over one another without mixing. Heat the remaining less dense spirit solutions simultaneously, in beakers over five spirit lamps, up to near the boiling point (to about 167°), and then pour them carefully, in the order of their density, on the cold spirit solution. Over a sixth spirit lamp heat 3 to 5 ozs. of spermaceti in a beaker to 194° or 212°; dip a pipette into the fused mass, allowing about 0.25 cubic inch to enter. Then cover the opening with your thumb, and put the pipette so far down in hot alcohol that equilibrium occurs. By slowly drawing out the pipette, with thumb removed, you can, after a little practice, cause the fused mass of spermaceti to form one or several balls, floating in the liquid. The density of the fused spermaceti quickly diminishes with increasing temperature. The ball, therefore, does not, in each experiment, remain floating in the same spirit layer. By quick introduction you obtain it in the density 0.85; then, in cooling, it sinks slowly to the density 0.87.

These fused and slowly sinking balls now afford an opportunity of observing the solidifying of a body simply left to its cohesion. The following phenomena may be noticed:

1. The balls which, through currents in the alcohol, come very near each other, unite. The most frequent unions occur in the moment of solidifying.
2. When a ball comes into a spirit layer, the temperature of which is under 112° Fah. (the melting point of spermaceti), solidification begins first at one side or above, the balls begin to rotate.
3. Frequently one observes the sudden ejection of a small mass from a ball.
4. The rind consists at first of a smooth, thin skin. With increasing thickness, however, this becomes uneven.
5. The unevenness still increases, even after the rind has formed a complete spherical shell round the inner fused mass.
6. In the majority of balls, when the cooling does not proceed too slowly, there occurs a very remarkable phenomenon. As soon as the rind has acquired such firmness that a wrinkling of it is no longer possible, it sinks in at the thinnest part, and an opening is formed, through which alcohol penetrates into the interior.
7. The balls now sink pretty quickly into the denser and cold spirit solutions, and one may soon take them out and examine them with a microscope. After some time, however, there is a further interesting change in them.
8. The surface of the ball, after a few days, is found to have become crystalline. While the elevated parts, after extraction, are mostly smooth and transparent, they become later untransparent, white, and rough. If you examine this surface with a microscope of 60 magnifying power, you find in it a striking similarity to a bare mountain landscape.
8. By rotation of the fused balls, one may flatten them, and allow them to solidify during rotation.



CHINESE SCIENTIFIC LITERATURE.

and acquaintances meet, they seize and shake each other by the hand; with us, when friends meet, each clasps his own hands and shakes them to his satisfaction, at the same time giving expression to his feelings in a suitable manner. You read and write from left to right; we from right to left. This is altogether a habit and education, and one method is just as good as another, provided one understands it. With you, black is the prevailing color of mourning; with us, white serves the same purpose. Your young people, previous to marriage, usually spend much time cultivating each other, and trying to ascertain their mutual adaptability and congeniality; we leave the matter in the hands of our parents, who manage our matrimonial affairs in a way at once satisfactory to themselves and to us. And I am free to say you will find as much conjugal happiness among a given number of families in China as you will find in any other country of the world."

Wear of Railroad Rails.

We recently called attention to the reported fact that, on a railway running north and south, the eastern rail wears out the faster. This has been attributed to the earth's rotation. We recommended that the eastern rails and wheels should, therefore, be made stronger than the western. The Chicago Standard accuses us of making an error, as "the wheels running on the eastern rail going south run on the western rail going north." A journal that can print such an absurdity as this only exposes its ignorance of common things.

Calla Lilies.

Mrs. Rollin Smith, of Swanton, Vt., writes to the Burlington Free Press as follows: "Since your recent notice of my possessing a continually blooming calla, I have received several letters from different parts of the State asking me for the treatment which produces such favorable results. I use a four gallon jar, and give an eastern exposure. In the summer, I keep it wet enough so the water may stand on the top, and at all times very wet. Once a year I take the plant, shake the earth from the roots, and fill the jar with earth taken from under old sod. As soon as a blossom commences to wither, I cut it down, never allowing a flower to die on the plant. The result is that in sixteen months I have had eighteen blossoms on the same plant, and at the present time it has two very large full blossoms."

Suet Butter.

The Waverly Butter Company, of Charlestown, Mass., call attention to their continued operation of their patent for the manufacture of butter from suet and cream, and deprecate the statements, now so common, that the artificial butter processes have all proved failures. They are doing a large business, with perfect satisfaction to their customers.

ALL interior fences should be portable and easily removed from place to place, and removed entirely and stored away when not wanted. Every farmer has long lines of fences which, for half the time, are of no use whatever.