

For the Scientific American.

### Perfection of the Human Frame.

Beauty is a property of animal forms, that is, the provision which is made to adapt their appearance to the perception of the animals with which it converses. The bones are covered, the bowels concealed, the roughness of the muscles smoothed and softened, and over all is drawn an integument which answers the purpose of concealment. Could we view the mechanism of our bodies through the skin, it would excite our fears. Durst we make a single movement if we saw our blood circulating, the tendons pulling, the lungs blowing, the humors filtrating, and all the assemblage of fibres, valves, &c., which sustain an existence, so frail? A surprising perfection of the animal mass is the *package*, by means of which several operations are going on at the same time: yet the case containing the machinery is rolled and jolted about without any injury to the mechanism. The whole must, therefore, be firmly packed together. Examine the contents of the trunk of any large animal, the heart pumping at the centre at the rate of eighty strokes in a minute; one set of pipes carrying the stream away from, and another bringing the fluid back to it again; the lungs performing their elaborate office distending and contracting their many thousand vesicles, by a reciprocation which cannot cease for a moment; the stomach exercising its powerful chemistry; the bowels propelling the changed aliment; collecting from it as it proceeds, and transmitting to the blood an incessant supply of prepared and assimilated nourishment; that blood pursuing its course; the liver, the kidneys, &c., drawing off from it their proper secretions.

The great art in packing, is to prevent one thing from hurting another; for this end, the head, chest, and abdomen of an animal body is provided with membranous partitions which keep the parts separate. This most curious and important provision is visible in the entrails, which one would think were in danger of being injured by every jump or fall. The danger is, however, admirably warded off. The intestinal canal, throughout its whole process is knit to the edge of a broad flat membrane, called the mesentary, like the edge of a ruffle, and being four times as long as the mesentary itself, it is what a sempstress would call "gathered on." The mesentary sustains the small vessels, arteries, veins, &c., which lead from or to almost every point of its coats and cavity, and this membrane is strongly *tyed* to the first three vertebrae of the loins

PHYSICIAN.

### New Light for Ships.

A gentlemen of the French Navy, named M. Gaudin, has invented a light for the purpose of preventing accidents at sea, which appears to be a most important and desirable object and cannot but commend itself to the commercial and naval marine of all nations. The apparatus consists of a reservoir of oxygen from which the gas flows under a pressure of mercury and enters a flame produced by spirits or camphene, through a small aperture at the axis of the wick, and the light thus oxygenated is thrown upon a piece of magnesia fasted to a fine platina wire. The lamp in which these are placed has a reflector and the whole is enclosed with apertures for air and for safety. This light the inventor thinks may be advantageously applied to railroad locomotives as well as vessels at sea.

### Horse Power Hoe.

Hoes to operate by horse power are made by Garret & Son, Leiston Works, Suffolk, England, for which the Royal Agricultural Society have awarded premiums. They are constructed upon the lever principle, each hoe working independently of the other, and although they look complicated, they really are not so, but easily managed and not liable to go wrong. Two men and two horses will hoe nine acres per day, the work for both men and horses being easy. Comparing it therefore with hand labor, the cost does not exceed one half, while the work of the hoe in point of execution, is stated by our informant to be greatly superior, as it can be regulated to any depth. The economy of its labor, however, is not of so much consequence, as the circum-

stance of being able to get the work performed where actually required.

### Chinese Peculiarities.

A foreigner has just started a newspaper in the Chinese language. Whether it will succeed or no remains to be seen. It is a novelty to the people. The only paper published by the Chinese that can at all be depended upon is the Pekin Gazette. This is published at irregular periods at the Capital, and thence distributed throughout the Empire. It is a matter of great importance for the Mandarins to secure an early reading of the Gazette, in order that they may be enabled to proceed in their official duties; for it generally seems that the only means by which the officers of government arrive at a knowledge of the will of their sovereign, is through the medium of that Gazette.

Express riders are in readiness at Pekin to carry the Gazette in different directions over the Empire as soon as published. The same rider carries the Gazette from Pekin to any one city, as for instance, Canton, performing the distance on horseback by means of relays of horses at short distances. The distance from Pekin to Canton is performed in six days, riding incessantly day and night; it proves fatal to a great portion of the riders. As a general rule, no rider is able to make more than two trips, as he either dies or becomes perfectly disabled.

A high Mandarin who is under the necessity of securing an early perusal of the Gazette, pays not far from \$20 per month for his paper, whereas those who are able to defer the perusal to a later date, pay proportionably less, say \$3 per month.

It is generally filled with court gossip and court ceremonies, alike insipid and uninteresting.

### Heroism.

Mankind are not acquainted with their own nature. We have progressed in inventions and have advanced in the science of civil government, but are there not hearts still pining in misery and bosoms heaving with distress.—Go to the bedside of the poor invalid and learn a lesson of true heroism. Yes, 'tis there that the soul of man can drink in some feelings of that fate which awaits us all. The excitement of battle may lead men to brave death fiercely, unthoughtfully, but what a heroism that is which can calmly look death in the face and smile at the grim monster as inch by inch he steals through the avenues of the system and breaks to pieces the "wheel of the cistern." This is heroism. But there is a nobler heroism still. The man who can dare death in the lazar house of disease in ministering to the woes and sufferings of others, is a true hero—one of God's heroes. The man who can dare to be alone in a cause he thinks right though all the world were against him, is a true hero. The man who can die for the truth amid the jeers and scoffs of a multitude is a true hero. The man who leaves his native land for an uncertain home in another, or to teach others a more pure philosophy and religion with nothing but persecution as his earthly portion, is a hero; and the man (and how many these are among us) who amid poverty and lowliness of lot struggles day after day for his wife and little ones without scarce a hope, or a thought beyond the narrow bounds of his poverty stricken home, is also a hero and a true hero. They who have braved the frowns of fortune or the bitter iron persecution of opinion, because of physical infirmity, or what is more heart rending, the soul-eating canker of neglect, are truly heroes—more so, indeed, than those who have lived and died upon the breath of popular applause.—*Glen Ruther.*

### Scientific Coincidence.

In 1815 Captain Smith ascertained that the height of Mount Etna is 10,874 feet. The Cutanians disappointed that their mountain had lost nearly 2000 feet, would not believe it. In 1834 Sir John Herschell, who was not aware of what Capt. Smith had done, determines the height by a careful barometrical measurement and found it 10,872½, a difference of 1½ feet. Herschell called this a "happy accident," but Dr. Wollaston justly remarked "that it was an accident which would not have happened to two fools."

### Winter Quarters of Miners in the Highest Andes.

As it was in the middle of the summer, I could not help reflecting what a dreadful abode this must be in winter, and I inquired of our leader and of the miners concerning its climate in that season. They at first silently pointed to the crosses, which in groups of two, three, and four, were to be seen in every direction; and they then told me, that although the mine is altogether inaccessible in winter, for seven months, yet that the miners used to be kept there all the year. They said that the cold was intense, but that what the miners most dreaded was the merciless temporales, or storms of snow, which came on so suddenly that many miners had been overtaken by them, and had perished when not 150 yards from the hut. With these monuments before my eyes, it was really painful to consider what the feeling of those wretched creatures, must have been, when, groping about for their habitation, they found the violence of the storm unabating and irresistible. It was really melancholy to trace, or to fancy I could trace by the different groups of crosses, the fate of the different individuals. Friends had huddled together and had thus died on the road. Others had strayed from the road, and from the scattered crosses they had apparently died as they were searching for it. One group was really in a very singular situation. During a winter particularly severe, the miners provisions which consist of little else than hung beef, were gradually failing, when a party volunteered, to save themselves and the rest, that they would endeavor to get over the snow into the valley of the Maypo, and return, if possible with food. They had scarcely left the hut when a storm came on and they perished. The crosses are exactly where the bodies were found. They were all off the road. Two had died close together; one was about ten yards off, and one had climbed to the top of a large loose fragment of rock, evidently to look for the hut on the road. The view from San Pedro Nolasco, taking all together, is certainly the most dreadful scene which in my life I had ever witnessed.—*Sir Francis Head's Journey across the Pampas.*

### Improvement of the Gipsies.

A society has been formed in England for the purpose of attempting the moral and religious improvement of the Gipsies. At a meeting of the society not long since, in Brighton, the Rev. Mr. Crabb addressed the society, and stated these facts.

He said that in England, the origin of the Gipsies was enveloped in darkness, but that it was known that they appeared in Switzerland in 1418—from which country, they had however, almost entirely fled during the reign of Napoleon, who ordered them all to be taken into the army. Mr. Crabb denied their Egyptian origin, and traced them from the Sudhas in Hindostan, both in their physical configuration and dialect, and related as an instance of the latter, that Lord Teignmouth once said in Hindostan to a young gipsy girl, 'you are a great thief.' The girl replied without a moments hesitation, 'No, sir, I am not a thief, but I live by fortune telling.'

### Truth.

Truth courts investigation, but error shrinks from scrutiny. Truth fears no evils from the most rigid examination, but error always fears the consequence. Truth is immutable, and will stand criticism. Truth, like its author, is eternal, and will exist amidst the wreck of matter and the crush of worlds, while error will be swept away with the refuge of lies. The more you examine truth like gold the brighter it shines. Truth is never tarnished by inspection, but discovers the more splendor. Any system which shrinks from scrutiny discovers corruption in its premises, and is unworthy the attention of an intelligent mind. A certain writer has said with the utmost propriety; "He that will not reason is a bigot; he that cannot reason is a fool; and he that dares not reason is a slave."

"The steed called lightning (says the Fates) Is owned in the United States, 'Twas Franklin's hand that caught the horse; 'Twas harnessed by Professor Morse."

### Trees.

At the Cape of Good Hope a tree of peculiar beauty grows, called the silver tree. At a distance its leaves present the appearance of silver and sparkling with diamonds. On approaching near the spectator finds the leaves downy, and of a silvery hue. At the apex or point of each leaf a small globule is suspended; and upon shaking the tree the drops fall off but are immediately renewed by collecting vapor from the atmosphere. Even in its driest state and under a burning sun, nothing but absolute observation can give a correct idea of the beauty of that tree.

The Banyan tree of India is, however, the greatest natural wonder of the arboreal world.—Originally a single trunk, there falls from each trunk a fibre or vine, which on reaching the ground takes root and forms a new trunk. This being continued as fast as the trunks become sufficiently strong to send off their branches, the trees eventually extend over several acres. That near Bombay is large enough to shelter ten thousand troops.

### TO CORRESPONDENTS.

"H. S. of Ohio."—We are not in possession of the specification of Mr. Wall's Patent and have not yet ascertained whether the electric process toughens or hardens. When we get out the specification, it will be noticed if of sufficient importance. Mr. Wall resides East India Road, Middlesex county, England.

"L. F. M. of Ala."—We have sent the Constitution of the New York Mechanics Institute. The wind ship was not flattered as you would observe by us. It was not new either, but these things do good for all.

"R. W. P. of —."—In some future number we shall publish receipts for tempering tools of steel. There are a great variety of plans and opinions on tempering. The tempering of silversmith's rollers, is kept a pretty close secret.

"M. O. P. of N. H."—We have seen a great number of perpetual motions, but there never has nor never will be one made to be of any service as a propelling power. There is no such a thing in the Science of Mechanics as a power creating a power superior to itself. We would sincerely recommend all mechanics to study the first principles, you appear to have a mind ingenious and inventive, only direct it right. Had we room in our columns we might explain the impossibility of your machine being a perpetual motion, but the operation will satisfy yourself.

"E. S. E. of N. Y."—There is no apparatus with which we are acquainted that is used for drying tan bark for fuel. The only profitable way would be such a plan as you suggest.

"D. E. S. of Mass."—It is not possible to tell how many modifications of the endless chain wheel there is. A Caveat filed in the Patent Office will secure the invention for one year, unless application is made by some other person for the same thing. In that case the Commissioner of Patents will inform you and you will have to make the application for your patent within three months after said notice. A Caveat costs \$20 and then \$10 more when you make application for a patent.

"E. B. of Conn."—We are much obliged to you for the promptness of your answer and the information contained in your letter.

"W. E. B. of Pa."—By your arrangement of the windlass, &c., you may expect that no gain of power can be the result. If you examine any treatise on the wheel and axle you will be satisfied of this. Why not use a Steam Engine for drawing up the ore. It would be as cheap as manual labor, or why not apply horse power. There is as little friction in the straps as in cog-wheels. Do not go to any expense in patenting any machine until it is fully tested. It is best to be careful in this respect. Much obliged to you for the information sent.

"F. H. S. of Md."—We hope to receive a notice soon of a more full description of your valuable invention.

"N. M. of Mass."—In eight days after we get your letter the information will be received. Be particular about the principle, and state it clearly in your next letter, as a great many patents have been taken out for stoves.

"R. T. of Ky."—The French mode of pre-