

SIR DAVID BREWSTER.

While we are recognizing the claims of "the mighty dead" whose discoveries in science have shed such a luster on the page of history, we mean not to neglect the living, but shall take frequent occasion to present their names and merits before our readers. The lives of living statesmen, generals, historians and novelists, which are oftentimes brought before the public with a flourish of trumpets, do not deserve such a conspicuous place in the eyes and hearts of the people as those of men who, by their scientific discoveries and inventions, have contributed so much to extend the boundaries of intercourse and promote the comfort and happiness of life. The name which stands at the head of this article is well known throughout the civilized world; it stands high on the scroll of fame; and yet there are not many persons who know much about the man himself—what he is, or where he is.

Sir David Brewster was born at Jedburgh, Scotland, in 1781. His parents were in very moderate circumstances, but with toiling and economy—national characteristics—they managed to assist him to a collegiate education, with the intention of his becoming a Presbyterian minister. He was a bright and diligent student, and at nineteen years of age took the degree of A. M. in Edinburgh, and attracted the attention of such men as Professors Robertson and Dugald Stewart, for his scientific attainments. In such pursuits he soon became so eminent that he was selected to the editorship of the "Edinburgh Encyclopedia," which he conducted from 1808 up to 1830—twenty-two years. During this period he devoted himself with such success to optics that he became the most profound writer in the world on this science, and he made a great number of original discoveries in prosecuting his studies. While writing the article on "burning glasses" for the "Encyclopedia," he was led to suggest that the construction of lenses out of zones of glass, each of which might be made in several segments, would make an apparatus of unequalled power for throwing the light to a great distance in light-houses. This important invention was of great benefit to the public and gained great honor to its author. He soon afterwards received honorary degrees from several scientific associations, was admitted a member of the Royal Society, and awarded the Copley medal. In 1816 he invented that popular philosophical toy, the *kaleidoscope*, which, by the mere adjustment of a few pieces of colored glass, causes very beautiful and striking effects to be produced on the vision. It is stated that one maker in London made a fortune by the manufacture of these toys, owing to their popularity and the very great demand for them after the method of their construction was made public. It is well known, however, that the author of it never made a cent by his invention in his own country; the French Institute, in Paris, awarded him the prize of 3,000 francs, and this was all he got, we believe.

In 1819 he made some very remarkable discoveries on the polarization of light, and for these the Royal Society awarded him both the gold and silver Rumford medals. In 1825 he was elected a corresponding member of all the scientific bodies on the continent of Europe, and in 1831 he received the order of knighthood from William the Fourth, with a pension of £300 per annum. On the death of the great chemist, Berzelius, a few years since, he was elected in his place, as one of the select eight foreign associate members of the French Academy. This honor was coveted by the most illustrious philosophers, because it is only conferred after the most rigid examination of the scientific qualifications of candidates. On this occasion several names were presented for the honor, but they were all withdrawn as a mark of acknowledged respect to Brewster.

As an author he is a most agreeable and interesting writer. He treats the most intricate scientific and mechanical subjects with the skill of a master, and throws into them such a vivid simplicity that his treatises have all become very popular. He is the translator of Euler's letters on philosophy, and is the biographer of Sir Isaac Newton. Whatever topic he has touched he has left the impress of an original genius upon it.

He is a very regular contributor to some of the Reviews; has written largely and well on photography; has laid down the laws for the proper construction of the stereoscope, and it is expected that he will present several papers on these subjects at the meeting of the British

Association, to be held at Aberdeen next month. It is a pleasure to know that such a veteran philosopher and Nestor of science has been a constant advocate of rational freedom and representative government; and that he has devoted much time and the energies of his mind for the benefit of the working classes, especially in advocating the necessity of superior houses for them, as it regards light and ventilation.

He is now in his seventy-eighth year, and in the course of nature has not many days to fulfill on earth; but for that very reason we thought it well to give this brief account of him, while he is still among the living. He is not a man of wealth, but has sufficient for all his wants. He resides in the city of Edinburgh, is a devout Christian, and is esteemed the most eminent living philosopher in Great Britain.

TIRES FOR RAILROAD WHEELS WITHOUT ANY VISIBLE JOINTS.

Quite a number of tires are manufactured in France and Belgium according to a process patented by Petin, Gaudet, Jackson & Co., in Rive-de-Gier (Southern France). This process consists of a series of operations succeeding each other at short intervals, whereby the tire is produced perfectly ready for use. A bar of iron or steel is first rolled out to the required thickness; it is then passed into what they call an *enrouleur*, or coiler, which forms the bar into a coil resembling a coiled spring, or a corkscrew having its threads compressed. This coil is welded under a very heavy hammer, which at the same time forms it from the rough. The piece is now passed into the first rolling-mill, whereby its shape is improved, and a second rolling-mill completes the operation by perfecting the shape and smoothing the surface of the tire. All this is done with so much accuracy and rapidity that in the factory at Rive-de-Gier from one hundred pieces hardly one is spoiled, although 60,000 kilogrammes (1,320 cwt.) of iron and steel are formed daily into tire. These require no turning and have no visible welding joint, the tire being manufactured from a ring, the diameter of which is increased as it passes through the rolling-mills, whereby the required form is given to it at the same time.

Until lately only one such factory has been in existence in Europe, but at present one of the largest iron manufactories in Belgium, the company of Ougrie, at Seraign, near Liege, have introduced this process in their works, and large numbers of such tire are now manufactured and used all over Europe.

RAILROAD SLEEPING-CARS.

It is not more than two years ago that our attention was first directed to the subject of constructing railroad cars in such a manner that the seats might be easily and rapidly transformed into lounges for lodgers, thus rendering night-traveling upon railroads as comfortable as steamboat-traveling—an effect which had not previously been accomplished. Immediately after first hearing that a sleeping-car had been put upon some road out West, we announced the fact in the *SCIENTIFIC AMERICAN*, and suggested that this was a good field for the exercise of the genius of inventors. And so it has proved; for we have not only secured a great number of patents on such inventions for our clients, but the many plans of night-cars and car-seats which have been illustrated in our columns also testify that the inventors have not let their ingenuity in this direction slumber. The result is, that now we can scarcely take up an exchange paper but what has something to say about sleeping-cars; and, although it is often only a mere mention of the fact that they have been introduced on some road in the neighborhood of the place whence the newspaper issues, yet such brief statements prove, as conclusively as if volumes were written on the subject, that such inventions are wanted and that good devices are now coming into extensive use. Any useful invention which well supplies a great public want will always meet with liberal patronage, and the railroad sleeping-car is the most useful and comfortable invention for the benefit of the traveling community that has been latterly introduced.

"ONE MAN'S MEAT ANOTHER MAN'S POISON."

On this subject an able writer in *Blackwood's Magazine* says that, in 1844, a French soldier was forced to quit the service because he could not overcome his violent repugnance and disgust towards animal food. Dr. Prout knew a person on whom mutton acted as a poison.

He could not eat mutton in any form. The peculiarity was supposed to be owing to caprice, but the mutton was repeatedly disguised, and given to him unknown, but uniformly with the same result of producing violent vomiting and diarrhoea. And from the severity of the effects, which were, in fact, those of a virulent poison, there can be little doubt that if the use of mutton had been persisted in, it would soon have destroyed the life of the individual. Dr. Pereira who quotes this passage, adds, "I know a gentleman who has repeatedly had an attack of indigestion after the use of roast mutton." Some persons it is known cannot take coffee without vomiting; others are thrown into a general inflammation if they eat cherries or gooseberries. Hahn relates of himself that seven or eight strawberries would produce convulsions in him. Tissot says he could never swallow sugar without vomiting. Many persons are unable to eat eggs; and cakes or puddings, having eggs in their composition, produce serious disturbances in such persons, if they are induced to eat them under false assurances.

PREPARING WOOL FOR MARKET.

Sheep are generally taken to some stream and washed, by squeezing the wool between the hands, until the water flows off clear; then the animals are allowed to run in the fields until they become dry, after which they are ready for shearing.

If the weather is cool, or if the sheep are kept too long in the water they are liable to take cold and die, and many farmers lose several sheep annually from this cause. Sheep should never be washed but on a warm sunny day, and the operation should be conducted as rapidly as possible. Owing to the liability of sheep taking cold, some farmers shear their fleece without washing, this saves considerable trouble, and the grease and dirt render the fleece much heavier than if washed; but purchasers give just so much less per pound for it.

It is recommended by those who have given much attention to the preparation of wool for market that all wool should be washed before it is shorn, but in our opinion it would be far better for wool-growers, if there was an understood arrangement between manufacturers and dealers in wool, in regard to the purchase of unwashed fleeces, so as to relieve the farmer from washing the animals, as the wool can be and generally is washed afterwards, before it is carded in the factories.

By wetting the wool of sheep by pouring water over them, then allowing them to stand in the warm sunlight until the oil and dirt become softened, they can be washed afterwards in one half of the time usually occupied in this operation.

THE DOOM OF THE WORLD.—The *North British Review*, discoursing on the doom of the world, has the following remarks:—"What this change is we dare not even conjecture; but we see in the heavens themselves some traces of destructive elements and some indications of their annihilative power. The fragments of broken planets, the descent of meteoric stones upon our globe, the whirling comets wielding their loose material at the solar surface, the volcanic eruptions in our own satellite, the appearance of new stars, and the disappearance of others, are all foreshadows of that impending convulsion to which the world is doomed. Thus placed on a planet which is to be burnt up, and under heavens which are to pass away; thus residing, as it were, on the cemeteries and dwelling upon mausoleum of former worlds, let us learn the lessons of humility and wisdom, if we have not already been taught in the school of revelation."

RECIPTS FOR TESTING EGGS.—There is no difficulty whatever in testing eggs; they are mostly examined by a candle. Another way to tell good eggs is to put them in a pail of water, and if they are good they will lay on their sides, always; if bad, they will stand on their small end, the large end always uppermost, unless they have been shaken considerably, when they will stand either end up. Therefore, a bad egg can be told by the way it rests in water—always end up, never on its side. Any egg that lies flat is good to eat, and can be depended upon. An ordinary mode is to take them into a room moderately dark, and hold them between the eye and a candle or lamp. If the egg be good—that is, if the albumen is still unaffected—a light will shine through a reddish glow; while, if affected, it will be opaque or dark.—*Springfield Republican*.