

SCIENTIFIC MUSEUM.

Medical Science.

SULPHATE OF BEBERINE.—Dr. H. S. Paterson, of the Pennsylvania Medical College, directs the attention of physicians to the use of sulphate of beberine as a substitute for the sulphate of quinia.

It is obtained from the Bebeeru or Greenheart, of British Guiana, a tree of considerable size and extremely abundant. The bark yields the alkaloid largely, but it is particularly abundant in the nut. A decoction of the latter is the ordinary popular remedy for intermittent fever in Demarara. The nut may be collected in almost indefinite quantities. The process for separating the alkaloid is almost identical with that for quinia, and not more expensive. If therefore, it proves on trial equal in efficacy to that alkaloid, we will have a cheap and effective substitute within the reach of all.

Sulphate of Beberine, occurs in shining brown plates, (sometimes with a greenish tinge), is inodorous, and has a bitter, harsh, somewhat astringent taste. Like the sulphate of quinia, it requires an excess of acid for its perfect solution. It may be given in pill, solution, or powder. That it is a good general tonic, in small doses, is very evident. In the full anti-periodic dose it is more apt to disturb the stomach than the same quantity of sulphate of quinia, and occasionally vomits; but it possesses the advantage of being much less stimulating, and does not affect the head as that salt does.

'A letter,' says Dr. Paterson, 'from my friend and former pupil, Dr. H. J. Richards, of Grey Town, Nicaragua, of the date of March 25th, 1852, contains the following:—"I have used the Beberine, as you suggested, with uniform success in quotidian intermittents. I have since had no opportunity to prescribe it in remittents. All the intermittents of this coast, however, are comparatively easily treated at this season, and yield readily to both quinine and arsenic. The remittents and even intermittents of the fall months, are more virulent and often speedily fatal." Those months will certainly furnish a fairer test of Beberine; but it is something to know that, under existing circumstances, it produces the same effect as the quinine.

Dr. Watt, of Demarara thinks that it is tardier in its effects than the quinia, not interrupting the paroxysms so immediately, but he also thinks that its effects are more permanent.

A. J. applied to me with a very similar statement. While residing in New Jersey about six years since, he had a violent and protracted "billious fever," since which time he has had every month or two an attack of "intermittent fever," which has been speedily arrested by quinine. Such was his account of the case. I found his tongue furred, his eyes icterode, his breath offensive, his urine scanty and high colored. The anorexia was complete and thirst considerable. He had a daily slight chilliness, followed by considerable fever and a slight sweat. I gave him a mercurial purge and on the next day fifteen grains of the Sulphate of Beberine. He complained of some nausea, but no disturbance of the head. The same quantity of Beberine was given on the two succeeding days, when, the paroxysms no longer recurring, it was discontinued. He remains free up to this period (April), and says that he enjoys better health than he has done for years.'

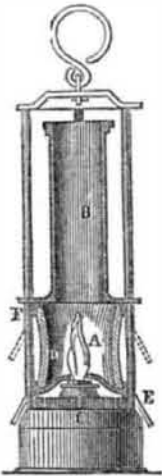
If the permanent character of effect, which these cases seem to indicate, should be established by a more extended experience, we will have in the Beberine an agent of very great value, adapted to cases which have hitherto seemed uncontrollable except by arsenic, to which there are so many objections. It is also much more speedy in its effects than the arsenic.

When the sulphate of quinia is so dear, and is becoming more so every year, it is to be hoped that Beberine will become a useful substitute for it in cases of bilious fever and agues. This can only be decided by experience; we therefore hope the American professors will soon establish its value in medicine by an adequate extent of observation.

Belgian Safety-Lamp.

This engraving is a view of a new safety lamp for mining purposes, which has been invented by M. Eloi, of Belgium, and which is now manufactured and employed very extensively in England.

The cylinder B, above the flame, is closed, and air is admitted only below the flame through a narrow breadth of gauze, C. A cap, D, on the principal of the solar lamp, causes the admitted air to be brought into actual contact with the flame, and thus producing perfect combustion, giving a light equal to at least five or six ordinary Davy Lamps, and one which the collier would prefer to any candle. There is no wire gauze to be injured, the light being radiated through a thick short cylinder of glass, A; and it has been found in practice that this glass is perfectly secure. It is bound top and bottom by a strong brass



ring, and should it even crack, either by explosion or accident, the pieces would be still held together, and heating the gauze to redness is entirely prevented. The air which enters through the narrow breadth of gauze below the flame being only as much as is necessary to support the flame of the wick, and the combustion being perfect, that portion of the cylinder above must always be filled with the products of combustion, and never with an explosive atmosphere, which is clearly shown by the lamp being extinguished whenever the general upward current is reversed. So confident is M. Eloi of the action of the lamp in this respect, from his experience in the Belgian mines, that he has placed a very coarse wire gauze over the top of the lamp, simply for the purpose of preventing particles of dirt or coal dust from entering, but wide enough to admit flame, if any could be supported in the cylinder. A conical brass shade, E, slides upon the rods, F, surrounding the glass cylinder, which can thus, if necessary, be raised to the top, and form a reflector, to throw the light downwards, when required, which would be very effective, if silvered or even tinned on the inner surface.

Boiler Explosions.

The steamboat captains, engineers, and owners have held a great meeting at St. Louis, and have adopted measures in regard to the bill now before Congress, for the better preservation of life on board of steamboats. Some of the provisions of the bill they are in favor of, but are opposed to others. They assert that if the bill passes in its present shape, it will no doubt operate against the trade on the Mississippi. We have no doubt of it; that is the intention of the bill, in respect to the trade as now carried on upon the Western waters. It is time something efficient was done to arrest the destruction of life on the Mississippi, and those who oppose such measures are not friends to humanity. The meeting was composed mostly of steamboat captains, and we must pay them the compliment of having passed some exceedingly commendable resolutions, among which are the following:—

"Whereas, the late awful and destructive explosions of steam boilers at our city, and in our State, together with their frequency in other parts of our country, call imperiously, if possible, for some remedy against their future occurrence.

While there is danger on the one hand, that the public mind may run riot under the extreme excitement in demands of vengeance, and sanguinary punishment on the authors of

these disasters; and on the other hand of resistance to those legislative enactments which may be thought requisite for future security, we acknowledge that the subject demands the most cool, clear, dispassionate, and solemn consideration.

We, the steamboat-men of St. Louis, after due reflection and deep thought upon the subject, now come forward, and freely declare, that we are not only willing, but anxious, to have all the restrictive and cogent laws enacted that are required 'for better security of lives of persons on steam vessels.'

We only ask in effecting this object, that we may not be subjected to useless and uncalled for expenditures and restriction.

We will agree to prove by hydrostatic pressure, that our boilers will sustain 100 lbs. to the square inch more pressure than we shall ever use.

This, we think, ought to satisfy public demand. We go further, and say that upon no occasion whatever, shall steam be raised to a greater pressure than 160 lbs. to the square inch; and in all engines hereafter to be built, the maximum pressure shall be lowered to 130 pounds to the square inch.

In further security, we suggest that every set of boilers shall have a well fitted Test Valve, placed upon an opening of one square inch or more, which shall be exposed to public view, and always be kept perfectly free, having no cord line, or any additional weight attached.

It shall be adjusted by the inspector at the highest pressure of steam allowed to be used.

To prevent its adhesion to the seat, it shall be raised so as to let off steam freely at the change of every watch; that is to say, every six hours, while the boat may be under way; above this valve a whistle may be placed, so as to cause the escapement to be heard throughout the boat.

Flues in boilers of common construction, hereafter built, shall not be more than fifteen and a half inches diameter, and not less than quarter inch iron.

The great causes of evils on our western waters, are often attributable to the misconduct or want of proper qualifications of captains.

They have the general control over their officers and crew.

These are bound by natural and legal ties to provide sustenance for themselves and families. The resources on which they live may be cut off, if they obey not the will of their commander.

We are satisfied that the great object for which the law about to be brought into existence can never be accomplished until the most scrutinizing investigation into character, conduct, habits, disposition, experience, and capability of captains, be gone into by the collectors of ports, or other agents of government.

The facility with which unqualified persons can now build, buy, or become possessed of boats they wish to command, calls for some restrictions.

Ignorant or reckless commanders will often collect around them relations, or others as unqualified as they are themselves. Hence most of our serious disasters.

To provide for filling offices with qualified men, we would suggest that it be made the duty of supervising inspectors to adopt such measures as shall promote apprenticeships of pilots and engineers.'

The bill provides most amply for the proper guards to public safety, in preventing other than qualified engineers having charge of that mighty power—the most useful, and, at the same time the most dangerous now used on earth.

By this bill, pilots and engineers will be recognized by law, as holding most responsible stations, and not as mere servants of common carriers.

Hold commanders and owners responsible for not employing these men; but if men be employed in accordance with law, let the guilty party alone be responsible for negligence or crime.

The day is past when there was a necessity of making public carriers on our navigable waters, insurers of goods or lives.

There are associated companies established for that express purpose.

[We disagree entirely with this latter conclusion. It would answer the purpose exactly to make these carriers responsible for the lives of their passengers.]

Resolved,—That no Captain, Pilot, Engineer, Clerk, or Mate of any steamboat; while said boat be under way, shall drink any alcoholic liquor, so as to become under its influence; nor shall any officer aforesaid, at such time, play at any game of cards, or at any other device or game of chance whatever.

Habitual drunkenness or gambling, either on board or shore, shall be good cause for revoking a license to any steamboat officer."

An Expedition to the South Seas.

An expedition to explore the South Pacific left England on the 12th inst. The intention is to explore all the islands between Australia and Valparaiso, and particularly the Feejee Islands. Although Capt. Cook and several other navigators have touched at these groups, and marked their position on their charts, yet very little is known respecting them, further than that many of them are surrounded with coral reefs, the land exceedingly fertile, and the climate salubrious, and also that the natives are addicted to cannibalism. The expedition consists of a frigate and a steam tender, and has on board a number of scientific gentlemen.

LITERARY NOTICES.

MACHINERY OF THE NINETEENTH CENTURY.—We have received Part 4 of this splendid London work, by G. D. Dempsey, an eminent engineer; it contains drawings of Birch's Machine for Cutting Sash Bars, and Rider's Patent Forge, for which prize medals were awarded. It also contains splendid views of a six horse-power Steam Engine by Fairbairn; Hopkinson & Cope's Double Platten Printing Machine, and Wilson's Patent Paper Cutting Machine. The drawings of this work are very large, and to scale. No machine shop can be posted up on such matters without a copy. It is illustrated from original drawings, including the best examples shown at the Great Exhibition. H. Bailliere, stationer and publisher, 290 Broadway, this city, is agent for its sale in the United States.

CITY DIRECTORY.—We are indebted to John F. Trow, No. 49 Ann street, for a copy of Wilson & Trow's Directory of the City of New York, for 1852-53; it contains 25,000 more names than any directory which has ever been published, which is a most valuable testimonial in favor of the new publishers. We have carefully examined it, and so far as we can judge it is essentially correct. It is not a "spurious affair," nor an "imposition," as Mr. Rode would have the public believe, but is evidently much superior to his own. The typography is faultless, and the binding strong and durable.

AMERICAN WHIG REVIEW.—The June number of this able political magazine is embellished with a likeness of Senator James Cooper, and containing several literary articles of much merit. Published by C. Bissell, New York, \$3 per annum.

GRAIGALLAN CASTLE, OR THE STOLEN WHIL: by Mrs. Gore, authoress of "Abednego," "The Money Lender," "Men of Capital," etc.: New York; Garrett & Co., publishers, 22 Ann st.; price 25 cts. Mrs. Gore is one of the most chaste and excellent writers of the present day.

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Postmasters, being authorized agents for the Scientific American, will very generally attend to forwarding letters covering remittances.

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N. B.—The public are particularly warned against paying money to Travelling Agents, as none are accredited from this office. The only safe way to obtain a paper is to remit to the publishers.