bar is adjustable in height by being suspended by a chain and stirrup, which may be raised or lowered by turning a crank.

A novel construction of Railway Tracks, dispensing with wooden cross ties, has been proposed by Hermann A. Haarmann, of Osnabrück, Germany. A longitudinal box-shaped bearer with a broad base forms the support for the rail, which is secured to it by clamps and cross bolts. The bearer is supported on lateral iron cross ties, by means of side recesses and fastening bolts. The general idea is not new, but the details of construction and arrangement are original.

Mr. Samuel Arnold, of Silver Springs, Tenn., has patented a new Clothes Wringer which possesses several advantages. The rollers are of wood, faced with rubber, and the pressure is applied by means of wooden springs, which are formed into forks at each end and are capable of being reversed whenever they become set. The action of these springs is regulated by a convenient lever locking arrangement, adjustable as desired, so as to produce more or less pressure between the rollers.

An improved Car Brake has been patented by Mr. J. V. Ericson, of Escanawba, Mich. It can be operated from the engine, caboose, or any other part of the train, and the inventor claims that the system is less expensive and requires no more dead weight of iron than air brakes. It is designed especially for freight cars.

An improved Machine for making Cotton Batting has been invented by Mr. J. L. Norton, of Memphis, Tenn. It consists of a pair of compressing rolls, an accumulating cylinder around which the cotton is wound under the pressure of rollers, and a hot pressing roll, combined in a suitable manner.

Mr. John Hogan, of Fort Worth, Tex., has invented a new system of Car Coupling, in which each draw head is provided with both a hooked draw bar and a locking drop gate, the particular point covered by patent being the manner in which the draw bar is held in horizontal position by cushioning springs.

A Water Wheel invented by Mr. S. P. Mackey, of Brownsburg, Va., is in the form of a funnel, having a solid lower end with a socket at the bottom, and provided with buckets on its inclined sides, extending through about one quarter of the circumference. The inlet openings are on the inner surface of the sides of the wheel, and the outlet openings on the outer.

Communications.

Our Washington Correspondence.

To the Editor of the Scientific American:

The order of the Commissioner of Patents to the examiners whose cases were behindhand to work until five o'clock is beginning to produce its effect, so that there will soon be muchless time to wait before a case is acted on, and inventors will thus be able to know without much delay whether their hopes of obtaining a patent are well founded or not. As one effect of the order, it may be noted that the last issue of patents, that bearing date April 16, is the largest one issued in any week for two years. The following are the numbers of each class: 302 patents, 16 reissues, 18 designs, 38 trade marks, and 6 labels.

The owners of these patents and those of the previous week's issue will have to wait for them some time longer than is usual, on account of the failure of Congress to make any appropriation for the printing of the specifications. It is not yet known how long the patentees will have to wait, as that depends entirely upon the action of Congress in passing the deficiency bill, and there appears to be no disposition to hurry matters at the Capitol. This failure of the appropriation is going to cause considerable trouble, and will offset for the present to some extent the good effected by the Commissioner's order, because, although the patents will be numbered, dated, and signed, as the specifications are not printed, the patents cannot be sent out, and inventors will have to do as well as they can without their long wished-for documents. It will, no doubt, be a cause of considerable annoyance to many patentees, and of actual loss to some, especially in reissue cases. The Patent Office, however, is not to blame in the matter, but the short-sighted pseudo-economy of Congress.

"PROTECTION" TO CASTINGS.

The House Committee on Patents has agreed to report favorably Mr. Sayler's bill "for the security of property in metal castings." It provides that any person counterfeiting any registered metal casting by using it as a pattern in moulding, without first obtaining the written consent of the owner of the registration, shall be liable to the latter in the amount of the ordinary wholesale profit upon the articles produced; and any court of competent jurisdiction may order the delivery of such counterfeit castings to the complainant, or their destruction by the marshal. The requirements to those wishing their rights in their castings protected are these: First, such castings must have upon them the word "registered," together with the date of registration; second, the names of the parties requiring the protection must be recorded in the Patent Office, and a fee of $20 will have to be paid in the same manner and for the same purpose as the fee for a patent. The certificate of registration is to remain in force for 17 years. This is an iniquitous bill, inasmuch as it aims to empower the owner of a wooden pattern for an old stair plate, for example, which anybody can make for a dollar, the right to collect hundreds of dollars damages of any poor fellow who uses one of the cast plates for moulding.

TESTING TORPEDOES.

The House Committee on Naval Affairs has agreed to report a bill appropriating $250,000, to be expended in purchasing and testing the different styles of torpedoes known, with a view of reaching a conclusion as to the best and most suitable for use by the United States Navy.

PATENT REVENUE STAMPS.

It is reported that the Committee on Ways and Means are about to recommend a new system of collecting the revenue on cigars, said to have been patented by Mr. Chas. Ewing, the essential feature of which consists in putting a stamp on each cigar and another one on the box, those on the cigars having numbers to correspond with the number on the stamp. As every box stamp is to be furnished with a number distinct from all the other box stamps, a box that has been stamped and emptied cannot be used again without detection, as the numbers on the cigar stamps must correspond with the number of the box stamp.

IMPROVING THE MISSISSIPPI.

From reports lately received here, it appears that the channel at the South Pass is constantly deepening. From the head of the jetties to Section No. 105, a distance of 10,500 feet, there is now an open channel 250 feet wide and 24 feet deep. From that point to Section No 115, a distance of 1,500 feet, the channel is 140 feet wide and 24 feet deep; and from the last point, for a distance of 40 feet, the depth is 23 feet. The estimated amount of material to be removed in order to secure a channel 250 feet wide and 24 feet deep entirely through the Pass is 65,000 cubic feet, according to the latest surveys, which, it is thought by the government engineer, will be accomplished within the next sixty days.

The House Committee on the Mississippi Levees have agreed to report a bill authorizing the appointment of a commission to report upon the improvement of the levees from St. Louis to the mouth of the river, to consist of three army officers and three civilians. The bill appropriates $250,000 to defray the expenses of the surveys, the salaries of the officers, etc.

In this connection, it may be stated that Mr. M. J. Adams, of St. Paul, Minn., has lately been before the House Committee on Commerce, asking for an appropriation to test his invention for establishing permanent channels in rivers, which consists in a line of tubes laid in the bed of the river, provided with valves which open and close apertures through the tubes. Water is forced into the tube by a pump at the head, and a gate at the other end secures the pressure. By opening the valves covering the apertures in the tubes at any desired place, the water rushes out with such great force as to thoroughly agitate the sand or mud in that neighborhood, keeping it in suspension until carried away by the current into deeper water.

HATCHING SHAD BY STEAM.

The new method of hatching shad, in which steam machinery plays an important part, to test which an appropriation was passed by Congress last December, gives promise of being successful. A station has been established on Albemarle Sound, nearly a million of young shad have been planted in Virginia and North Carolina waters, and the work is expected to be largely increased before the season's close. The Smithsonian authorities recently received information that shad had been caught at the Falls of the Ohio river, and also in the Coosa, in Alabama, which is believed to be the result of the operations of the Fish Commission.

THE DECLINE OF AMERICAN NAVIGATION.

A statement has been prepared by the Bureau of Statistics, showing the value of the imports and exports of the United States, carried respectively in United States and in foreign vessels, during the 57 fiscal years ending June 30, 1877, with the percentages carried in American vessels, from which it appears that in 1821 the amount carried in American vessels was $113,201,462, in foreign vessels $14,358,235, the percentage in American vessels being 88·7. In 1826 the percentage was 92·5, since which time the percentage gradually declined, until in 1877 the amount carried in foreign vessels was $859,920,536, and in American vessels $316,660,281, or a percentage of only 26·9. R.

Washington, D. C.

The Flexible Wheel Base for Cars.—Letter from a Veteran Inventor.

To the Editor of the Scientific American :

Allow me to suggest to you that the "Cleminson Flexible Wheel Base System" for railway cars, which you give in the SCIENTIFIC AMERICAN of the 13th inst., is identical, apparently, with that patented by the undersigned in this country in 1839 or thereabout,* and which was adopted and used on the old Catskill and Canajoharie Railway, N. Y., from that time until its failure and abandonment in 1840, and with the same satisfactory results, as the London *Engineer*, as quoted in your article, certifies for it, as used in England. The above railway was one well adapted to test the practicability of the plan, it being very tortuous, as located through the gorges of the Catskills, having one curve of less than 100 feet radius, and several from 400 to 1,000 feet radius. We tested them for lateral friction, and found, by indication on dynamometer, that, excepting at the instant of entering curve or tangent lines, the difference between them or curved and straight lines was of but slight amount. We found also that the wear and tear of this form of our rolling stock was very much reduced, and the repairs for the time used was as 4 to 10, being 60 per cent in favor of mine. I have the certificate of the acting directors and superintendent of repairs of the corporation to that effect, as I remember; but I have it not at hand, and may not be quite exact. Mr. Knowles, afterward actuary in your patent agency office, as I have been informed, assured me, when calling on him at the Patent Office at Washington—in 1840 or thereabout—that there was not a model of railroad machinery in the office more frequently called for for inspection than mine. So it would seem that there must be many still living who will remember it. I was induced to attempt the invention from the stimulus of a liberal reward offered by the Belgian Government in 1835 for the most perfect plan for obviating lateral friction on railway curves, enforced by the advice of my chief and preceptor in civil engineering, the late distinguished Major Ephraim Beach.

My professional friends all seemed to regard my invention as about theoretically perfect, and placed its prospective value at a high figure, so high as to quite puzzle me to determine what amount of good I could do with it, and I am still in doubt about it. There was one pretty serious objection to the plan, as operated on the wooden stringer and strap rail of those early days of our railway building; for although these cars of mine were not apt or liable to jump the track, yet when a "snake head" or broken rail had seduced them from their proper path it took whole panels of fence rails and any quantity of green saplings, enforced with strong remarks—in fact, denunciations on the contriver and contrivance—before they could be reinstated, and be induced to take to their narrow ways again. But it was want of capital, and lack of the knowledge that it is more difficult to farm a patent than to invent it, that prevented me from introducing it generally. But, however, it is not my object in writing to you to claim any particular credit in this matter, or to detract aught from that of my brother engineer, Mr. James Cleminson, in England, who has not only reinvented a valuable improvement, but has got it well introduced into use, and is in a fair way to bring it into general use. I wish him good speed and ample reward for his efforts in this line of railway improvement.

Yours very truly,

L. J. GERMAIN, formerly a C.E.

Cuyahoga Falls, Ohio, April 16, 1878.

*The patent referred to was for an improvement in railroad cars, by Lewis J. Germain, of Catskill, Greene County, New York State, issued May 7, 1839. The patentee represents in his patent a six wheeled car, having a separate frame for each pair of wheels; these frames operating upon each other, by means of a toothed segment and rack, or by means of jointed cross bars, on the middles of their sides of contact. The middle frame of the three which sustains the axles is so connected with the general car body frame above them as to allow a certain degree of vertical play to it, for the purpose of equalizing the bearing of the wheels on the rails; this is effected by means of what are called stands and slides. The wheels are thus to adapt themselves to the curvatures of the road and to its horizontal deviations. The claims are to the stands and slides in combination with the middle and top, or body frame, in the manner described, and to the manner of connecting the three axle frames together, by a single or double cross joint, or a rack and segment wheel.

Mechanical Oculists, and how they Treat Cinder in the Eye.

To the Editor of the Scientific American :

The best and most effectual treatment, and one which will give immediate relief from suffering caused by extraneous matter, loose in the eye, or attached to the eyeball or eyelid, is by extracting as quickly as possible said foreign substance. This is an operation frequently performed in our workshops, and very often in the machine and brass finishing departments, and always resulting in speedy and sure relief. To those who may not be as familiar with the operation as mechanics generally are, I will give a short description of the *modus operandi*. A keen, sharp, smooth edged penknife and a steady nerve are all that is required on the part of the operator, and for removing floating and loose substances the penknife will more readily attach itself to them if the point be magnetized by rubbing it on a common horseshoe magnet. Thus prepared, take the sufferer where you can have the benefit of a good light, and let him stand up and lean his head back against the wall, door jamb, or other suitable place; this is necessary that he might be able to hold his head steady. Then by standing square in front of him carefully examine the eyeball, and the corners of the eye, at the same time requiring the person to roll his eye to each side, and upwards and downwards, and by pulling down the lower eyelid explore the lower part of the eye and its cover, next catch the upper eyelashes between the thumb and forefinger and turn over the eyelid; this is usually done over the back of the penknife or a pencil; by this means the upper part of the eye and lid can be inspected. In the examination should the minutest speck be observed, examine it closely to determine whether it be a small blister, or pimple, or some foreign substance; if the former, let it alone severely, but if the latter remove it with the sharp point of the knife with a firm and steady hand. Some attempt this with a punching, spasmodic, nervous, picking motion; but to perform it skillfully it must be done with a confident, sure, cutting stroke, just as though it were to be sliced off, and, if possible, to cut the piece or strike it without touching the eye. The most difficult operation that we are called upon to perform is when a minute particle of iron or grindstone grit becomes firmly attached to the pupil of the eye. The eye becomes quickly inflamed from the irritation, also weak and watery, making it painful to open the eye, and if

the piece has cutting angles, a grain of emery for instance, the outer angles cut or scratch the eyelid, causing very severe pain; though it may be only as large as a pin's point, the sufferer feels it to be as large as a pea, and expresses considerable surprise at its minuteness upon examining it after its extraction, and wonders how so small an object could have given him so much pain and uneasiness. In extreme cases it becomes necessary to have a couple of assistants, one at each side, one to hold the head steady, the other to hold the eyelids open, so as to allow the operator a fair opportunity of making a sure stroke with the knife each and every time, for sometimes it will require many attempts to remove before it is effected, and in many cases the piece is broken off bit by bit until all is removed. One of the most eminent surgeons in this section, in passing one of our machine shops a short time ago, stopped and witnessed just such an operation as has been described, and was so much pleased with it that he remarked it was more skillfully and speedily performed than if he himself had done it, but he was notaware of the fact that the person doing it was an old hand at the business. In conclusion, I would recommend the immediate removal as indicated of any foreign substance in the eye, and if the eye becomes inflamed shield it from the light and apply cold water for a short time; nature will soon finish the rest.

MECHANIC.

Pittsburg, Pa., April 12, 1878.

The Byrne Galvanic Battery.

To the Editor of the Scientific American:

In your issue of the 13th of April, I notice a description of a "Remarkable Galvanic Battery," as having been exhibited at a meeting of the Royal Society of Telegraphic Engineers, in London, and though the name of the inventor is not correctly given, there can be no doubt as to whose invention reference is made. This is an error of very trifling importance, however, and would hardly be deemed worthy of notice; but the description of the little apparatus referred to is faulty and imperfect in other respects, and likely to convey wrong impressions regarding its construction. I observe also that great diversity of opinion exists, and various theories have been advanced touching the causes of its extraordinary power. Under these circumstances, and as this voltaic novelty is now exciting considerable interest and no little philosophical speculation among British scientists, I feel called upon to furnish a more accurate description of its mechanism, and at the same time to submit what I deem the most reasonable interpretation of certain striking phenomena peculiar to its operation.

The accompanying woodcut will serve to give a correct notion of the general appearance of the battery.

A A, conducting cords; C, suspension rod and set screw combined, to connect between second and third cells in series; *a a*, poles of battery; *b b*, two set screws to couple for quantity; *d*, an extra binding post, not essential, but convenient when two cells only of the battery are required; *e e*, air tubes.

The composition of the fluid has been correctly stated, namely, one measure of commercial sulphuric acid to five of water, and to each pint of such dilution two ounces of bichromate of potash, though chromate of calcium, if substituted for the potash salt, will give a much higher electro-motive force, and, consequently, a much greater thermal power.

In order to guard against splashing, the quantity of fluid put into each cell should not exceed seven and a half fluid ounces, but, when the zincs become thin from use, eight ounces may be accommodated.

To connect the battery for intensity, turn down C firmly and raise *b b;* and for quantity, reverse the operation by turning down *b b* firmly and releasing C from its contact with the lower metallic connection.

In galvano-cautery, the main purpose for which this little battery was first devised, and is now being extensively used, and more particularly during certain difficult and complicated surgical operations, this simple means of changing the entire character of the current to meet emergencies is of the utmost importance.

For obvious reasons, the pneumatic agitator should be worked by quick and short impulses, and not by slow or prolonged compression of the bulb, and the battery should not be kept immersed except when in action.

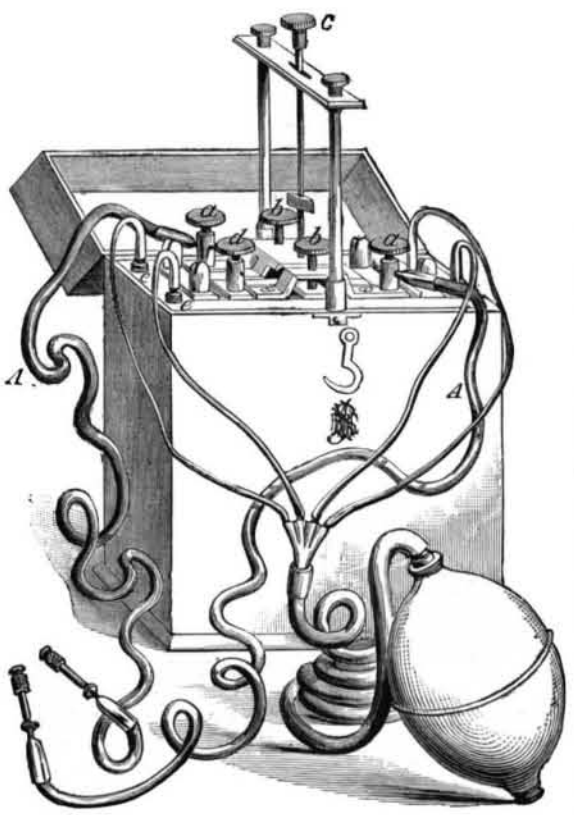
Finally, and in order that the aim contemplated in devising this voltaic organization, the lessening of internal resistance, may be correctly understood, I shall indicate, in a few words, the manner of preparing my patent negative plates, the distinctive feature of the battery, and the main source of its great power.

Each negative element consists of a plate of copper, to one surface of which, as well as to its edges, a sheet of platinum foil, compact, and free from pin holes, is soldered, and to the opposite surface or back a sheet of lead, the three metals being so united that the copper shall be effectually protected from the action of acids. The lead back and edges are then coated with asphaltum varnish, acid-proof cement, or any other like substance; and, lastly, the platinum face, being first rubbed over gently with emery paper, is to be thoroughly platinized in the usual manner.

Each cell of the battery above described contains two such plates, between which a single zinc is suspended, and when the elements are immersed so that the exciting fluid reaches within an inch of the top, a negative surface of 20 square inches is brought into action. It will thus be seen that the platinum alone is the negative metal, and the copper core a conducting body merely, while the lead, being almost passive, serves no other purpose than to protect the copper, so that any other, and, best of all, a non-metallic, substance capable of resisting the action of bichromate solutions, might, with advantage, be substituted for the lead.

By this device the fixed and well known electro-motive energy of a platinum-zinc pair, which, I need hardly say, is much higher than that of platinized silver, and, combined therewith, the conductivity of copper, are insured in one and the same compound element. As might be supposed, therefore, the practical result is that the only internal resistance to be encountered is that of the fluid, which, in the apparatus under consideration, must necessarily be quite small, since the zinc and platinum surfaces are no more than three sixteenths of an inch apart. As to the electro-motive force in bichromate fluid, repeated and carefully conducted tests, by General H. L. Abbot, U.S.A., and others, prove this to be from 1·95 to 1·99 volts. Now, as this battery will show, during agitation, on a tangent galvanometer, with no external resistance, a deflection of 82°, or nearly 50 webers, it follows that the internal resistance cannot be much over 0·04 of an ohm.

This, then, is the basis of what has been justly claimed for and accorded my battery, namely, "a remarkably high electro-motive force, with an almost immeasurably small internal resistance." Nor is this most desirable condition limited to the particular form of battery herein described, for these conducting negative plates have proved to be infinitely superior to carbon in a porous cup with concentrated



THE BYRNE GALVANIC BATTERY.

bichromate of potash and sulphuric acid. As compared with platinized silver, also, with sulphuric acid and water, say one to ten or eleven, as an exciting liquid, not only will the electro-motive force be found to be twenty-five per cent or more higher and the resistance less, but, there being no internal currents due to a platinum-silver pair, and comparatively little tendency to polarization, the action will be steadier than that of the most perfect Smee battery. Hence these plates are admirably adapted, and have been successfully tried, for operating electro-motors, for electro-plating and other purposes.

With regard to the heating capacity of my battery, and the *modus operandi* by which pneumatic agitation increases its power, I have but a few words to add, suggested by reading the report of what took place at its exhibition in London.

It has been stated that "ten of my cells heated a stout platinum wire, thirty inches long and No. 14 B. W. G., to a glowing heat on pumping," and as evidence of the surprise created by this demonstration, the report goes on to say that "some idea will be formed of the great heating power here displayed, when it is remembered that it takes seventy or eighty Grove's elements to heat a similar length of No. 18 or 24 B. W. G. platinum wire." Now, inasmuch as I have often shown that four of these cells will heat to an equal degree from fifteen to eighteen inches of such wire, ten cells ought to, and would, I know, bring to a like condition considerably more than thirty inches. I am disposed, therefore, to surmise that the amount of this thick wire within reach at the time may probably have been limited to thirty inches, or there must have been some imperfection in the plates or cells used. At all events, the little battery of four cells will heat to a bright cherry-red twenty inches of No. 16 platinum wire.

As to the "development of heat within the cells," and "why the pumping of air into the cells should increase its current strength so much," it seems to me the distinguished electricians who are reported to have been present at this exhibition will, after a little reflection, find no difficulty in settling both questions to their entire satisfaction. I may state, however, that if a plate of amalgamated zinc, say $2\frac{1}{2} \times 5$ inches, and $\frac{3}{16}$ thick, be immersed, *alone*, in 8 fluid ounces of strong bichromate fluid, the temperature of said fluid will rise to nearly 140° F. in about half an hour, or within a few degrees of the highest point reached during prolonged electro-chemical action and agitation. Whether the slight retardation of the current by the fluid may add a fraction to the heat produced by chemical decomposition, I am not prepared to say; but it is quite certain that the development of heat within the cell is due in a great measure, if not entirely, to chemical action of the fluid on the zinc, and this is one among other reasons why the plan of suspending one zinc between two negative surfaces has been adopted.

Where cells have been employed to operate electro-magnetic motors, however, and the exciting fluid has been sulphuric acid and water merely, I prefer to use a single negative surface and one zinc. In this case there is little or no chemical action on the zinc, beyond what is represented in current, and the energetic disengagement of hydrogen insures a free circulation in the liquid.

With regard to the method adopted for agitating the fluid, I have only to say that, after many experiments and trials with various other contrivances, this has been found the most simple and convenient. That agitation has no influence whatever on the electro-motive force of the battery is unquestionably true, as Mr. Preece has demonstrated, nor has it much, if anything, to do in the production of heat within the cells. In fact, its action is purely mechanical, and agitation by any other device, if equally practicable, would accomplish the same result.

The suggestion of Professor Adams, as to its effecting a free circulation in the fluid, by which the metallic surfaces are kept constantly clear or, to use a meaningless term, *depolarized*, is, undoubtedly, a hint in the right direction, and in entire conformity with my own views.

JOHN BYRNE, M. D.

314 Clinton St., Brooklyn, April 15th, 1878.

American and English Weather Warnings.

To the Editor of the Scientific American:

I was much interested in the *résumé*, given in your issue for March 23, of Mr. Bennett's report of his storm warnings, which have created so much interest on this side, especially as I had just received from Mr. Scott, Secretary of the London Weather Office, the reprint of his paper upon the same subject, read before the Nautical Society. The comparison given below shows that there is considerable variance between the two reports. Though, as Mr. Scott says, "meteorologists are most deeply indebted to the generous public spirit of the proprietors of the New York *Herald* for their great liberality in transmitting these warnings gratuitously," it has been found impossible to make much or any practical use of them on our own coasts. The newspapers have naturally noticed them, since even one correct warning, even if a dozen proved incorrect, is seized on and wondered at by the public mind.

The following table refers to the same period (February 15 to December 31). Mr. Scott gives, in a full table, the date and wording of each warning; the actual meteorological conditions at the date indicated, from the returns for Western Europe; the measure of success, shown by the comparison; and a column for comments. Mr. Bennett's results are taken from your columns.

Description.	Bennett.	Scott.	Description.
Entirely correct	31	7 or 17·5 per cent.	Absolute success.
Correct in general	8	10 or 25 per cent.	Partial success.
Correct in particular parts	5	6 or 15 per cent.	Very slight success.
Failed	2	17 or 42.5 per cent.	Absolute failure.
	46	40	100

The totals represent the supposed distinct storms predicted in 36 telegrams. After his table, Mr. Scott adds: "These figures, therefore, show that not 45 per cent of the warnings can be considered really successful. What is meant by 'really successful' is that the information conveyed by them was of real value to seamen in British ports."

Their chief value, he considers, is for ships crossing the Atlantic, since "storms in winter, like misfortunes, never come single," and they may expect bad weather as they approach the American coasts.

York, England. J. EDMUND CLARK.

ASTRONOMICAL NOTES.

BY BERLIN H. WRIGHT.

PENN YAN, N. Y., Saturday, May 11, 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 36 mo.	Saturn rises	2 38 mo.
Venus rises	3 01 mo.	Uranus in meridian	6 33 eve.
Mars sets	10 31 eve.	Uranus sets	1 25 mo.
Jupiter rises	0 30 mo.		

FIRST MAGNITUDE STARS.

	H.M.		H.M.
Alpheratz rises	0 56 mo.	Regulus in meridian	6 43 eve.
Algol (2d-4th mag. var.) sets	8 50 eve.	Spica in meridian	10 00 eve.
7 stars (cluster) sets	7 51 eve.	Arcturus in meridian	10 51 eve.
Aldebaran sets	8 08 eve.	Antares rises	8 43 eve.
Capella sets	11 57 eve.	Vega in meridian	3 17 mo.
Rigel sets	7 21 eve.	Altair rises	9 56 eve.
Betelgeuse sets	8 55 eve.	Deneb rises	7 23 eve.
Sirius sets	8 22 eve.	Fomalhaut rises	3 36 mo.
Procyon sets	10 33 eve.		

REMARKS.

Mercury is now invisible. All the planets, except Jupiter, now have northern declinations. We mention the stars in the order of their right ascensions, this week, for the first, and will do so hereafter. We do not give the ephemerides of Algol, as it sets so early in the evening as to render observation impracticable.