

# Scientific American.

MUNN & CO., Editors and Proprietors.  
PUBLISHED WEEKLY AT  
NO. 37 PARK ROW, NEW YORK.

O. D. MUNN.

A. E. BEACH.

## TERMS.

One copy, one year.....	\$3 00
One copy, six months.....	1 50
CLUB RATES { Ten copies, one year, each \$2 50.....	25 00
{ Over ten copies, same rate, each.....	2 50

VOL. XXIX., No. 24. [NEW SERIES.] *Twenty-eighth Year.*

NEW YORK, SATURDAY, DECEMBER 13, 1873.

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## A WORD TO OUR SUBSCRIBERS.

Many of our subscribers will observe, printed in red ink on the wrapper covering this week's copy of the SCIENTIFIC AMERICAN, the announcement that in three weeks their subscription will be exhausted. The year and the volume thus expire, and we give notice a little in advance, and solicit a prompt renewal of all subscriptions, in order that our readers may experience no stoppage in the receipt of the journal, and that we may not miscalculate the quantity of paper to print at the commencement of a new volume.

The plan of discontinuing the paper when the time expires for which it is prepaid, we think preferable to the course adopted by many publishers, of continuing their paper indefinitely and collecting afterwards. The latter course is too much like having a bill presented for a suit of clothes after it is worn out. We shall be gratified to have every old subscriber renew, and doubly grateful if each will send one or more new names with his own.

We hope those of our subscribers whose term is about to expire, as admonished by the notice on this week's wrapper, will not delay in remitting for a continuance of the paper. The safest way to send money is by postal orders, bank checks, express, or draft on New York, payable to the order of Munn & Co. Little risk is incurred in sending bank bills by mail, but the above methods are safe beyond any contingency.

## BETTER TIMES.

The feeling of insecurity with regard to financial matters, which for the past two months has clogged the business interests of the country, is becoming rapidly dispelled, and people are beginning to realize that after all the hue and cry the panic is but a specter, mainly due to their own imagination. It was, in fact, a gigantic scare, a veritable panic, as baseless as the frantic rush of a crowd in a building on the shout of "fire," while its victims may be likened to such of the hapless bystanders as are trampled beneath the feet of the surging multitude.

Like all great storms, this one has left its ravages, which will doubtless be felt for some time to come; but in the main the horizon is clear and there is every prospect of a speedy return of business to its former channels. The subject has been freely discussed, theories innumerable have been ventilated, and dismal forebodings indulged in to an unlimited extent, until, as a sensation, the novelty of the excitement has died out. The talkers, therefore, having had their say, the workers, cool headed and far seeing business men, are striving to act; and while the former are now devoting their oratorical talents to the Spanish complications, the latter are busily endeavoring to repair the damages of the disaster.

Marked signs of improvement are exhibited in the reports from various quarters of the country, and notably so from the New England States. Total suspension, says an authority, is, in the majority of cases, being modified to half or three quarter time, and hands thus furnished employment are receiving wages enough to keep want well away from their doors. Collections are generally easier, and the record of protests of commercial paper and of suits in involuntary bankruptcy is largely diminished.

The mines of Pennsylvania have been kept open, although working hours have been reduced. The men have cheerfully accepted the situation, believing that small wages were better than absolute idleness. The iron masters, it is said, will shortly resume operations, although many have suffered very severely, notably for the cessation of orders for railroad supplies. Their renewal will necessarily assist the coal trade. Among the manufacturers there seems to be a general impression that the trouble is past, and we note that resumption of

business are extensively in progress, although in many cases it has been found necessary to continue reductions of time and wages. The tobacco interest has suffered but little. The jewelry manufacturers had experienced a stagnation in their trade, but this is reported to be gradually passing away. The knitting-mills of the northern part of this State are rapidly receiving orders, and improvements in buildings and machinery are progressing as usual. It is expected that the great establishments in Cohoes, N. Y., will start on full time again as soon as the water is let on in the canals. The safe dealers have reduced prices and sales are said to be brisk. The dry goods trade is recovering, and a good holiday business is anticipated.

The war contingency, while serving to divert the popular mind from the financial stress, is becoming the means of supplying work for large numbers of men. We note the following important contracts, which indicate brisk business for several of the largest machine shops in the country: John Roach is to build engines and machinery for one new sloop of war, to cost \$630,000; for two similar vessels, at 580,000; to repair four monitors, at \$720,000; and to build two engines for \$366,000. Quintard & Murphy are to construct engines for two sloops of war; the Delamater Iron Works, to repair the "Dictator." Atlantic Works, of Boston, to repair two vessels; Hartford Iron Works, engines for sloops of war; Wright & Co., of Newburgh, similar work; Cramp & Sons, of Philadelphia, are to overhaul four monitors; the Harlan & Hollingsworth Company are to repair three ships of the same type, and it is stated that the Navy Department has more contracts yet to issue.

The effects of the disaster had been severely felt in the eastern States before the magnitude of the panic had become fairly comprehended in the West. In spite of this fact, however, the work of recuperation seems to be as rapidly advancing in that section of the country. The iron interest of Cleveland was embarrassed for a time; but as a rule, we learn that there has been scarcely any reduction either of force, wages, or time in the factories and shops of the city. In Cincinnati, of the 12,000 workmen there employed, it is stated that hardly five per cent of the total have lost their places; while from Dayton and Columbus comes a similar report. Local journals go so far as to state that this is even an improvement on the usual condition of affairs at this time of year. From Chicago, St. Louis, and Louisville, advices are generally encouraging; and the same is true of recent reports from Baltimore.

We regret to notice reductions of wages on some of the railroads, notably on the Delaware, Lackawanna and Western. We hardly think that the best interests of these great and wealthy corporations are served by such a course, and consider that it would be wiser to exhaust every other means of retrenchment prior to diminishing the incomes of those whose labor they employ.

Altogether the feeling manifested throughout the country is encouraging, and the general condition of business is uniformly quoted as sound. There is an abundant demand for our products, enough to maintain all our industries; so that, we believe, it will involve only the length of time required for the excitement completely to die away before trade will be resumed, with even an increased vigor.

## ON THE PURCHASE OF PATENTS.

Complaints of fraud are sometimes made by purchasers of patent rights, who pay their dollars and receive their deeds, only to find out that the latter are defective and the money lost.

Example 1. A buys from B one half of all B's right in a certain patent, and takes it on the supposition that B owns the whole patent, but without instituting any examination to ascertain if such is really the fact. After the purchase, A employs an attorney to examine the records, and finds that B, at the time of the sale, was the owner of only one half of the patent; consequently A's title secures to him only one quarter of the patent, not one half as he supposed. A simple examination made before the purchase would have saved A from the loss.

Example 2. A contracts verbally with the patentee, B, for the exclusive right to make, use, and sell an invention during the lifetime of the patent, pays the money, receives the deed; and without examination of the document, supposing it to be right, places it on record and closes the transaction. Thereafter, on examination, it appears that the words, *the exclusive*, were omitted from the deed, the letter *a* being used in place. The deed, therefore, only conveyed a right to make, etc.; leaving to B the privilege of granting as many other rights as he might choose to the business competitors of A. Had A taken the precaution to employ an experienced attorney to examine the deed before paying the money, he might have really secured what he bargained for.

Example 3. A buys a patent, supposing it to be the only one ever granted for the special improvement claimed. It bears the genuine official marks of government origin, looks straight in all its forms, and appears to him to be all right. Without making a search, he pays the money, takes the deed, and proceeds at once to manufacture the article. After much labor and the outlay of several thousand dollars for mechanism, he succeeds in putting the goods on the market, when, to his astonishment, he is served with legal papers as an infringer of some prior patent; and only gets clear of the trouble by paying damages and buying an interest in the first patent. He is thus compelled to pay twice for the same article, which he might have avoided had he employed the services of proper persons to examine as to title and infringements prior to the first payment.

Example 4. A contracts for a patent, supposing that the

device is a new thing. Surely, he thinks, the government of the United States would not issue a patent for an old device. He therefore concludes that it must be all right, pays the money, and receives a deed. Infringers make their appearance. He brings suit, and then, to his surprise, discovers that the invention is a very old one and the patent utterly worthless. The Patent Office is far from being reliable in its grants. The only safe way, where interests of value are at stake, is to have careful searches made by competent attorneys as to the validity of the patent.

The same remarks apply in respect to the scope of patent claims. The purchaser is too apt to suppose, in buying a patent, that the claim is broader than it is, and covers the manufacture of an article so as to exclude all competitors. He therefore goes extensively into the business, exhausting money and energy, only to find out, what an attorney's examination would have quickly revealed before hand, that the scope of the patent claim is very narrow, and the patent of little value.

## CONCERNING A TELESCOPE OF UNLIMITED POWER.

In volume I, number 3, of the *Mathematical Monthly*, for 1858, may be found an article written by Professor George R. Perkins, then of Utica, N. Y. It relates to a fluid parabolic mirror; and the problem is demonstrated that "if an open vertical cylinder, containing a fluid, be made to revolve with a uniform motion about its axis, the upper surface of the fluid will assume a perfect concave parabolic form." A table is appended which gives the focal distances corresponding to different velocities of rotation; and these have been deduced from actual mathematical calculation.

If mercury be used as the fluid, we shall obtain a concave parabolic mirror which will be theoretically perfect. We think it possible to make use of this kind of mirror for astronomical purposes; for all rays of light falling upon it parallel to its axis will be reflected to the focus of the parabola, where could be applied the ordinary magnifying apparatus, after the method employed in the Newtonian reflecting telescope.

Now it is necessary to reduce our theory to practice. The cylinder containing the mercury must revolve with a uniform motion; and it is our opinion that the mechanics of the present day are fully adequate to the construction of machinery which shall impart a uniform motion to a vessel of mercury many feet in diameter. This problem of uniform motion has been successfully solved: the astronomical instrument known as the chronograph is made to move almost perfectly uniformly; and the heavy clockwork which is employed in moving large refracting telescopes, in a direction contrary to the diurnal rotation of the earth, is often so perfect that a star, from its rising to its setting, can be kept almost exactly in the center of the field of view. Now certainly, since we have attained so perfect a uniformity of motion as this, machinery can be devised and constructed which shall impart the required uniform motion to an immense vessel of mercury. It is evident that gravity would not permit this mirror to be inclined for the purpose of viewing objects which are not directly overhead; and since this is true, it is also evident that the value of the mirror of mercury would be somewhat lessened by reason of the fact that a celestial object would soon pass off the field of view of a stationary mirror. So that we must devise some method by which the rays of light from any part of the visible heavens may be thrown vertically upon the mercurial surface. For the accomplishment of this object, the principle of the philosophical instrument well known as the heliostat could be employed, and thus the rays of light coming from any heavenly body could be continually reflected vertically upon the mercurial surface.

As to some of the manifest advantages which this instrument would possess: The liquid mirror would not be distorted by a change of temperature; thereby being far superior to reflecting telescopes with solid mirrors. Again, there is no limit to the size of mirrors constructed in this way; and this fact will allow the use of eye pieces which will afford unlimited telescopic power. The speculum surface, also, of mercury is almost perfect, absorbing a much smaller amount of light than the polished surface of the metal used in ordinary reflectors. And the specific gravity of mercury is such that, after it has once assumed its position of equilibrium in rotation, it will be quite stable in its form. It will also be readily perceived that the principal thing about the mercurial telescope is its machinery; which can be much more easily and accurately constructed than the great lenses necessary for an immense refractor.

Now this plan for the construction of a large telescope certainly possesses advantages sufficiently great to warrant the expense of all experiments for testing its practicability. The essential thing in the execution of a large telescope consists in the requisite funds. The million dollar telescope, so earnestly talked about by some of the correspondents of the SCIENTIFIC AMERICAN for several months past, calls for a considerable sum of money; the mercurial telescope, offering far greater power, calls for a far less sum of money. And again, the entire lifetime of an optician would be barely sufficient for grinding and polishing and correcting a pair of lenses large enough for a million dollar refracting telescope; whereas an immense mercurial telescope might be constructed inside of two years; indeed it might be easily completed before the Centennial of 1876, at Philadelphia, if it is desired that it be used on that occasion. Such an instrument would add indefinitely to our knowledge of physical astronomy; and, moreover, the great amount of light which a large mercurial mirror would collect, even from exceedingly faint celestial objects, would be particularly favorable for spectroscopic observation.

This method seems, at present, to be our last resort for

the construction of a large telescope. Definite action in regard to this matter should be taken immediately. Let some one take hold and do something; success is almost certain.

Amherst College, Mass. D.

REMARKS BY THE EDITOR.—The suggestion here made by our esteemed correspondent for the construction of a reflecting telescope of unlimited power is novel and ingenious. It is, moreover, theoretically correct. But when we come to consider the difficulties which beset astronomers in using their present large instruments, though these are small as compared with the gigantic machines intended by our correspondent, we confess his idea seems to us to be impracticable.

Whoever has attempted so simple a matter as the adjustment of the wires of a three inch transit instrument, by looking through it upon a small plane mercurial mirror, knows how considerable the difficulties are. Even the insensible pressure of the wind, upon the exterior of a solid stone building in which the adjustment was attempted, has been known to produce such vibrations of the surface of the mercury, although it was insulated by elastic supports, as to render the work of adjustment impossible; and success is only attained during an almost perfect calm. If these difficulties attend the use of a mercurial mirror of only a few inches in diameter, are we not justified in believing it to be impossible, in the present state of human mechanical skill, so to arrange a plane mercurial mirror of several feet in diameter that it shall remain free from vibration? But granting that it could be done, can we conceive of any method by which the rotation, necessary to produce the requisite concavity of the mirror, could be imparted and maintained without inducing vibration? We will grant that the motion could be sufficiently regulated, though an absolutely accurate clock has never yet been made.

But we will suppose the mirror to be complete, and the objections mentioned successfully overcome. The instrument necessarily occupies a horizontal position; it is, we will say, twenty feet in diameter, and we now wish to use it to the best advantage. For this purpose, two plane mirrors, equal in size to our mercurial mirror, will be necessary; and whether they are made of glass or metal, the difficulties connected with the final polishing of their surfaces into a condition of proper accuracy are seemingly as great as the maintenance without vibration of the rotating mercurial mirror.

We are of opinion that it would be considerably less difficult to construct a concave mirror of speculum metal or other solid material, of the dimensions stated, than to produce either of the other mirrors; while the speculum concave, by its capabilities for change of position, would render the use of the two plane mirrors unnecessary.

We should be glad if our correspondent, and other writers who desire, would point out the particular methods that may occur to them, by which the objections we have suggested might probably be overcome. The subject is one of much interest, and its further discussion may lead to profitable developments.

#### THE PROTECTION OF PLANTS BY ARTIFICIAL CLOUDS.

The practice among gardeners of protecting vegetables from the effects of frost, by lighting fires at such points that the wind will carry the heated air and smoke over the plants, is not new, and in some countries is one of the commonest agricultural operations. In Chili, where large vineyards exist upon the slopes of the Cordilleras, the plan has been found of the greatest value in saving the vines from the cold wind which sweeps down from the mountains; and it is stated that even the tenderest shoots are defended from the frost, at temperatures as low as 21° Fah.

The most recent experiments in this direction, and perhaps also the most extensive of late date, have been carried on by M. Fiabre de Rieunègre, one of the largest vine growers in France. It may be remembered that about a year ago we briefly adverted to this subject, and said that it had elicited commendation from a congress of vintners in the above mentioned country. Since then, however, M. de Rieunègre's experiments have been made, and with such remarkably good results that the matter is invested with a new and, at this season of the year, timely importance to all engaged in the cultivation of the vine in our Northern States. The investigator in the record of his researches considers that fires of tar or heavy oils are not suitable, notably from the fact that cheaper and more efficacious material can be obtained, and also that, in order to keep the former burning over a considerable period of time, an amount of attention is required which eventually becomes very onerous. Wheat chaff, he says, answers the purpose better than any substance he has used, as it burns slowly, produces large quantities of smoke, and costs but very little. Moss, saw dust, or worthless hay may be employed when chaff is not conveniently obtained. The material is piled in heaps of about eight feet diameter and forty feet apart. Three fires thus disposed are sufficient to protect two and a half acres of vines.

In describing his mode of experimenting, M. de Rieunègre says that, having selected a night when the thermometer appeared to be rapidly falling, he collected all his laborers, together with a large concourse of neighbors from the surrounding country. As soon as the mercury fell to 32° Fah., a signal was given and the match was applied to three hundred heaps of chaff and straw. The flames were carefully kept under; and in a very few minutes, a dense cloud of smoke had settled over a plain of 360 acres. The fires were continued until the thermometer had risen above the freezing point of water, but were renewed within twenty-four hours, when one of the coldest nights of winter set in, with a

strong breeze blowing from the northeast. New heaps were kindled in the direction of the wind, the great cloud was agitated; and although, it is stated, the vineyards of the surrounding country presented after the frost a scene of desolation, those protected by the smoke were unharmed. Thirty thousand dollars worth of plants were saved by the operation, at the sole expense of a quantity of worthless chaff and straw.

#### ELOQUENCE AND PATENT FUEL.

When we have subjects to write about which call for beautiful displays of rhetoric (and it may be remarked that the editorials of a scientific journal are not popularly supposed to sparkle with such brilliant coruscations of literary genius), we think, by sufficient study, we might prove equal to any ordinary requirement; but we doubt if, under the inspiration of so prolific and poetic a theme as "patent fuel," we could evolve from our inner consciousness anything approaching the following, with which a writer in *Les Mondes* introduces that topic. The quotation is remarkable in that it broaches an entirely new theory of the origin of fire, the peculiar ingenuity of which will doubtless commend itself to all scientific minds:

"The world was born yesterday. One day an unknown meteor rushed with the wind (!) upon the summit of a forest. The horizon reddened, trees burst in flames, the leaves driven by a breath of summer whirled in torrents through the atmosphere: birds driven from their nests uttered cries of distress, panthers fled howling away, reptiles writhed upon the cinders, and crocodiles plunged into the lagunes. Alone, immovable and erect, man regarded with mute astonishment the bloody shadow of the new guest. Suddenly he felt a gentle heat penetrate his fibers, as the prescience of a novel destiny. Fire was found. Then braved he the frost, drove back the night, and caused the grain to leap from the bosom of the earth. Lighting the forge, he melted, molded, and mastered metal; and metal, vibrating under the orchestra of the forge, sounded the chant of the victory of humanity." And after two pages of this to descend to the advantages of a patent fuel!

#### THE SUPPRESSED MEMBER.

Of all tyrants, the most tyrannical is custom. As capricious as the King of Dahomey, she is as inexorable as Mrs. Grundy. There is no king or kaiser whose rule is so burdensome or so meekly endured, the secret of her power lying in the delusion of her subjects that they are wholly free. Her laws are the only laws that perpetuate themselves; and though originally mere freaks of barbaric fancy, or usages of some forgotten stage of social development, they have shaped the lives of so many generations that they have become part of the social framework, and are harder to shake off than Sinbad's old man of the sea. Our heaviest taxes are those we pay to custom, her tribute takers, with fernseed in their shoes, finding their way into the innermost recesses of our daily life and controlling our conduct where we least suspect it.

A thousand illustrations might be given; but just now our wish is to call attention simply to one: our habitual and unreasonable suppression of a member whose cultivation would immensely increase our executive power, and prevent our being utterly disabled by certain accidents which all are liable to. The oriental custom of restricting education to the male half of the race seems to occidental minds at once unprofitable and absurd. What then would we think of a custom which should effect the systematic repression, not of the girls merely, but of half the boys; requiring number one of every pair of boys to be trained to the utmost strength and skill, and condemning number two to awkwardness, inaction and weakness? Worse than that: allowing him to do nothing not directly and necessarily subservient to number one, yet requiring him always to take number one's place in case he should meet with an injury. Such unprofitable servitude to other customs than our own would certainly be accounted ridiculous in the extreme; but after all, is it so much worse than our careful repression of the sinister half of each boy's working members?

"Don't use that hand" and "Use your right hand" are injunctions that the child hears from the very first; and before he is old enough to understand the spoken words, the outstretched left hand is put back and the coveted toy given only to the right.

"Why?" he asks as soon as he is old enough to demand a reason for the slight put upon the unoffending member.

"Because," replies mamma, sagely, "it is awkward," or, "it isn't polite."

Why it should be awkward or impolite to use the left hand, mamma never thinks to enquire. That the exigencies of military discipline in some fighting age of forgotten barbarism made it necessary that all men should give preference to the same hand, or some other equally wise and potent reason established the custom at a time when one skillful hand was enough for one person, mamma neither knows nor cares; nor does it occur to her that times change, and that a good rule for one generation may be a bad one for another. Grant that social convenience is favored by the uniform use of the right hand for certain purposes, that is no sufficient reason for subordinating the left hand in all things, especially when the conditions of our lives and occupations make it very frequently imperative that the untrained left hand shall learn to do the work of the disabled right hand.

From the nursery the boy goes to school, and here the same unreasonable prejudice awaits him. Through instinct, accident, or caprice, he grasps his pen or pencil with his left hand, and his knuckles are sharply rapped for it. Why should he not be taught to write and draw with both hands?

It would take but little if any more time; and if it did, it would only keep him busy during moments which he would otherwise devote to idleness or mischief. The acquisition would never be worthless, and it might be of immense convenience to him. He might never have occasion to use his double capacity after the fashion of the popular scientist and teacher whose two-handed black board sketches are such a delight to his auditors, and who is said to pursue his microscopic studies with a pen at one side and a pencil at the other, drawing with one hand and writing with the other as the development of his subject may require; nevertheless his two-fold skill would ever be a possible source of satisfaction and advantage to him. He would be free at any moment to rest a hand exhausted by protracted use without any interruption of his work; he would be less likely to be disabled by trifling hurts; and in case one hand were stiffened by heavy labor, the other might be kept in readiness for delicate manipulations, for writing, drafting and the like.

We have seen more than one ambidextrous artisan whose ability to handle tools with either hand, as occasion demanded, gave him constant advantages over his one handed mates, not only in the avoidance of fatigue, but in the performance of nice work and the overcoming of difficulties, hard to come at by those restricted to the use of a single hand. The right handed man who can use a hammer or a knife readily with his left hand, or can tie or untie a knot when his right hand is otherwise engaged, will find frequent use for his skill. Indeed the advantages we miss through the non-cultivation of the neglected member are infinite in number and of incessant recurrence. They are among the taxes we pay to custom.

It would be useless to recommend the mature to undertake the culture of their left hands. They have been "left" unused and untrained too long; and the proper time for such work is in childhood and youth, when the muscles are tractable and time abundant. But need it be useless to urge parents to encourage such training on the part of their children, or, at least, not to discourage it?

#### SCIENTIFIC AND PRACTICAL INFORMATION.

##### EUROPEAN RAILROADS.

According to the most recent statistical data, the total length of all the railroads in Europe is 58,650 miles. The largest number of lines is in Great Britain, aggregating 15,351 miles; Germany is next with 10,739 miles, then France, 10,511, Austria, 4,492, Russia, 4,758, and Belgium, 1,892.

##### ADULTERATION OF TEA IN ENGLAND.

The London *Globe*, in an article on the above topic, says that the ill effects, often attributed to tea drinking, in the majority of cases are not due to the properties of the leaf itself. Adulteration has become so common that out of 183,000,000 pounds which passed through the British Custom House in 1872, during the month of July alone a Sanitary Commission found 10,000,000 pounds utterly unfit for human consumption. In a single chest a magnet brought out 43 per cent of the whole in bits of iron, colored green. This wholesale rascality is done by the Chinese before exportation.

##### RED AND WHITE MUSCLES.

M. Ranvier points out that the red and white muscles of a body,—very clearly seen by removing the skin of a rabbit—which exist mingled in the same region, are different both in structure and properties. On applying the electric current; the white portions contract almost instantly, and respond even to rapid and continuous shocks. The red portions, on the contrary, are much more sluggish; it requires a certain time for them, apparently, to feel the excitement, while, on quick interrupted discharges of electricity being administered, they simply assume permanent contraction. It is believed by the author that the latter are involuntary and of the nature of the muscles of the heart or other portions relating to the animal existence; the former, however, he thinks, are controlled by the will.

##### NEW DERIVATIVES FROM CAOUTCHOUC.

While recently investigating the properties of Gaboon caoutchouc, M. Aimé Girard has succeeded in isolating a white crystallizable substance which, on analysis, became resolved into methylic ether and grape sugar. In a second series of researches, the same author, with Borneo rubber, has found another material analogous in aspect to the first, and containing the same elements, but differing in that it contained grape sugar condensed, in other words, answering to the formula C<sup>12</sup> H<sup>12</sup> O<sup>12</sup> instead of C<sup>6</sup> H<sup>6</sup> O<sup>6</sup>, as in the former instance. Continuing his studies to Madagascar caoutchouc, still another substance appeared, of which the sugar gave a molecule containing C<sup>18</sup> H<sup>18</sup> O<sup>18</sup>, or doubly condensed.

The series thus determined also has regular relative differences in physical properties. Thus the first derivative melts at 414° Fah., the second at 418°, and the third at 455°, the temperature rising with the degree of condensation, thus conforming to established laws. As regards optical properties, the first component is inactive on polarized light, the second turns the plane of polarization 32° to the right, the third determines a rotation of 79° in the same direction. M. Girard has therefore discovered an intimately connected series, representing ethers of which the acids are isomeric forms of grape sugar.

Instead of an edition of sixty thousand of the "special" as promised to advertisers, we shall print of this number seventy-five thousand to commence with, and probably a second edition of twenty-five thousand before the first of next January.