## Scientific American,

## Scientific MUSEUM

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Analyzing Oils with Suiphuric Acid. At the last meeting of the French Academy of Sciences, the following communication was presented by M. Dumas, from M. Maumene, on the above subject. The fatty oils mingled with sulphuric acid disengage heat, this action may serve to distinguish them ; it separates in a striking manner the drying oils from those that are not so. Fifty grammes of olive oil having been placed in an ordinary test glass, the temperature of which was known by plunging a thermometer in the liquor, there were carefully dropped into it 10 cubic centimetres of sulphuric acid at the temperature of meter rose to 670-increase, 420. The mix- constant when the oil is pure, and when made drying oils, and may be easily known. The

ing does not take more than two minutes, only one minute is required to obtain the maximum temperature.

In another similar glass there were placed 50 grammes of oil of poppies, and it was likewise tested with sulphuric acid, the thermometer rose from 26° to 100°'5-increase. 74° '5. In this instance there was noticed, firstly, a very remarkable developement of sulphurous acid, not caused by olive oil ; and, secondly, a very great bubbling up of the liquid. On account of these two circumstances, the figure 74º 5 is too small. The difference between 42° and 74° 5 is sufficiently great to present a mode of analysis.

The experiment repeated several times under the same conditions, with the same olive 66° (Baume). While mixing the liquids the oil, gave each time the same developement of oils produce a much greater disengagement of thermometer was shaken, and the rise of the heat at 42°. The experiment made with difmercury noted. Beginning with the tempe- ferent sorts of olive oil, from various sources, distinguished from olive oil. Finally, that the rature of 25° for the oil and acid, the thermo-

with a similar degree of heat. The action of the acid is not less constant with the oil of poppies; experiments, moreover, prove that the developement of heat due to this oil is really at 880.4, instead of 71 or 74 degrees, as the direct experiment indicates. This process of analyzing may be applied to the olive oils of commerce; these oils are often adulterated only with oil of poppies, and in such a case their analysis can be made with certainty, if their qualitative composition is sure. But how would it be in case of other oils? In answer to this inquiry, I have fixed the rise of temperature produced by most pure oils, it results from my researches that the oil of ben and oil of tar furnish almost the same disengagement of heat as olive oil. That the other heat by means of which they can easily be

oil of ben and of tar cannot be mixed with olive oil, consequently, whenever olive oil gives more than 42° of heat in its mixture with 10 cubic centimetres of sulphuric acid (at 25°) their oil is not pure. The preceding appears sufficient to show the use that may be made of sulphuric acid for analyzing oils. In mixtures composed only of two oils, the employment of this acid will very much help in determining its quality. When the qualitative analysis has been made the quantity may often be declared with precision.

## LITERARY NOTICES.

THE MILE TRADE OF NEW YORK-By John Mul laly: Fowlers & Wells, pp. 118; price 25 cts. An excellent little treatise on the Milk Trade of New York, an article that forms so important an item in the food of mankind. The author gives some use-ful statistics, and shows the injurious effects of using what is commonly called "swill milk," which, as is well known, is obtained from cows stabled in the city and fed on the refuse from brew-houses and dis-tilleries. An erposure of this system of supply so deleterious to the health of our citizens was very much wanted, and we hope that this pamphlet will be read by every one.



The above is a view of the Caloric Ship | of fair wind, and the tide in her tavor. She | something not complete about her machinery. | Air Engine, see first page. We are indebted to "Ericsson," on her first trial trip, with a gale is now lying at "Green Point," there being For a full description and history of the Hot the N.Y." Illustrated News," for the above cut.

4 Burning Fluid and Safety Lamps. We have received a letter from a corres pondent in Boston, containing an article from the "Haverhill Gazette," Mass., on the above much importance to the community.

A new Volume of the SCIENTIFIC AMERICAN gas. None of what are called the explosive that a portion of the lake's boundary had been made a full investigation of the chemical chacommences about the middle of September in each fluids will explode until they become vaporswept away, and a passage forced by the racter of the various liquids sold by dealers for year. It is a journal of Scientific, Mechanical, and ized, it is the vapor, not the fluid, that is the rushing waters about three hundred yards in the purposes of artificial illumination, and other improvements; the advocate of industry in all cause of explosions. The author of the artiwidth, and ten or twelve feet deep, opening its various branches. It is published weekly in a have subjected these compounds, and the cle in question asserts that in the lamps of on the sea shore to the width of a mile. Subform suitable for binding, and constitutes, at the end lamps designed to be used with them, to very ofeach year, a splendid volume of over 400 pages, with a copious index, and from five to six hundred Newell which he saw, there were orifices in | sequently, a sort of mid-channel has been accurate experiments. Dangerous frauds have the cap, made, as he was informed, at the sug- formed, commencing a short distance below been continued for years by unprincipled original engravings, together with a great amount of gestion of Dr. Jackson, for the purpose of the origin of the outlet, narrower and much men in the sale of those compounds without practical information concerning the progress of inletting off the vapor-a safety valve. If these deeperthan the first, down which the water vention and discovery throughout the world. exposure," He asserts that a mixture of turseems to have rushed with much velocity, lamps have small holes in their caps, it is a The Scientific American is the most widely circulapentine and alcohol, colored with turmeric, ted and popular journal of the kind now published. scientific blunder, for the grand object to pre- until the lake has been emptied at least thirty has been sold by dealers for years, under the Its Editors, Contributors, and Correspondents are vent lamp explosions is to exclude the air. feet below its previous surface. This midname of "vegetable oil," with the unblushing among the ablest practical scientific men in the The pressure of heat from the vapor of an channel has gradually deepened in the centre, assertion that it was perfectly safe and unexworld. apartment, can never be so great as to ex- forming an outlet down which the waters are plosive. This mixture afforded by the distller The Patent Claims are published weekly and are plode the lamp. The safety of such lamps yet flowing into the ocean. And now that invaluable to Inventors and Patentees. 50 cents per gallon, at once in the hands of depends upon excluding the fluid and vapor the outlet has been forced, from its abrupt We particularly warn the public against paying an unscrupulous dealer advances from 50 cents money to Travelling Agents, as we are not in the from the atmosphere. A perfectly tight sides may be seen flowing the gaseous fluids to 70 cents per gallon, by adding one cent's habit of furnishing certificates of agency to any which succeed earthquakes among lofty mounlamp never yet exploded. As we have stated worth of turmeric to it, and changes from a one. tains. It is supposed that the bed of the Lake more than once, we say it again, fluids should volatile dangerous hydrocarbon or burning Letters should be directed (post-paid) to never, under any conditions, be used in a may have been instantly uplifted, and as MUNN & CO., 128 Fulton street, New York. fluid to the safe vegetable oil. Such are some quickly have returned to its customary level; house where there are children or servants. of the tricks of trade. Every case of this In this vicinity there is a dangerous burning | thus forcing an outlet through the heavy alkind should be punished with severity. The Terms! Terms! Terms! luvial by which it was formerly confined. fluid sold, by the name of "Rosin Oil," under author (we do not know him,) of the article One copy, for One Year the pretence that it is a safe unvolatile hydroin question, states that Newell's wire gauze \$1 Six Months carbon. Five minutes before writing this, Erratum. lamp, which has been noticed in the Scientific Five copies, for Six Months \$4 In the description of the Safety Railway \$8 we examined some of this " Rosin Oil," which Ten Copies for Six Months for American, is but a modification of the one pa-Truck, illustrated on the front page of last Ten Copies for Twelve Months, \$15 tented by Isaiah Jennings, of this city, N.Y. the purchaser supposed was something very Fifteen Copies for Twelve Months, \$22 week's paper, the address of the patentee, A. in 1836, and the question is asked of us, if this different from a turpentine mixture: thus Twenty Copies for Twelve Months, \$28 people are often deceived by names. There L. Finch, should have been New Britain, is true, as Newell's has been sold for a patent Southern and Western Money taken at par for is an oil made from rosin by its destructive Conn., this is the more essential because lamp. We are not aware of any patent havsubscriptions, or Post Office Stamps taken at their there are two "Britains" in that State. ing been granted for it, and we cannot disco- distillation, but not a burning fluid. full value.

ver that one was granted to I. Jennings in Drainage of a Lake by an Earthquake 1836, but there was one in 1841, which com-A singular phenomenon lately occurred in bined a cotton percolator and wire between California, by which Lake Merced, a sheet of the fluid chamber and the flame. All volatile water, covering about thirty acres, and which hydrocarbons are explosive, that is, any fluid is situated seven miles distant from San Fran subject. The author of it is evidently well acemployed for giving light, if it evaporates at cisco, threatens to become dry ground. A quainted with his subject, and it is one of shock of an earthquake took place during the a low heat, and this vapor is suffered to mix Manufacturers and Inventors. with the atmosphere it becomes an explosive night, and in the morning it was discovered The article in question says, "I have

