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SCIENTIFIC AND SANITARY.

A German inventor has devised a new kind of thermometer in which tolulol is to be employed, instead of mercury or alcohol as at present. The advantages of the substitution are said to be numerongs. In the first place, tolulol is a liquid of dark color, which would render the column more (asily seen; secondly, the freezing-point and boiling point of that liquid are far apart; finally, its price is not so high as that of mercury, and its manipulation does not present any danger to the health of the workmen.

The restoration of the Purdue Laboratory at Lafayette, Ind., recently destroyed by fire, is being pushed forward rapidly. It will be remembered that one of the features of this laboratory was a stationary locomotive whose wheels, in revolving, actuated the wheels of a testing apparatus, thus allowing the students to make a large variety of experiments in practical thermodynamics. This locometive, the "Schenectady," has been returned to the University from the shops at Indianapolis, where it was put in thorough repair. The engine was backed over the new track, into the annex, laboratory, and directly upon the carrying-wheels of the testing apparatus, under its own steam, indicating the ease with which the new labratory may receive any locomotive for tong stie

M. Perrotin (Paris Academy of Sciencess July 9) notes that Mr. Charlois of the Observatory of Nice, who has been exploring photography a definite zone of the celestail sphere near the ecliptic, has discovered in two years by this means no less than forty-five asteroids, raising the total number with which he must be credited to seventy-two. In the course of his investigations, he found one hundred and twelve asteriods already known. If a table of asteroids in order of magnitude be constructed it is seen that in each order the number of new asteroids is less than that of the known ones, which seems to indicate that a comparatively small number remains to be photographed and that a tentative induction may be made as to the distribution of asteriods in space, in relations to their distance from the sun. M. Perrotin is now devoting himself to the study of M. Charlois' results, with this end in view.

A curious story, illustrating the preservative properties of choke-damp, comes from China. In the province of Anhui a party of miners recently struck an ancient shaft, where history records that a great catastrophe occurred 400 years ago. The miners, on reopening the old shaft, came upon upward of 170 bodies of the former workers, lying where they had been overcome with foul gas four centuries back. The corpses were as if those of yesterday, quite freshlooking, and not decayed in any way. The faces were like those of men who had only just died. On an attempt being made to move them outside for burial, they one and all crumbled away, leaving nothing but a pile of dust and the remnants of the stronger parts of their clothing. The miners, terrified, fled from the spot, and though there were valuable deposits of coal in the shaft nothing would induce the superstitious men to return to their work.

The Forth Bridge receives a new coat of paint every three years, and one-third is done each year, so that the painters are continually at work. Besides the painting, every part of the structure is carefully ex-

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amined, and loose or defective rivets removed and new ones put in their place. About fifty men are employed, and an endeavor is made as far as possible to retain the same men upon the work, as it always takes new hands some considerable time to become thoroughly at home in some of the aerial positions they are at times called upon to occupy. At first this work was attended with considerable danger, but very complete apparatus in the shape of small cages having now been provided, the men run very little risk even at the highest and most dangerous points. It requires about fifty tons of paint to cover the bridge, and the area to be dealt with is something likes 120 acres.

According to an interview with the manager of one of the largest electric welding companies, published in The Age of Steel, St. Louis, July 14, the prospects of that industry are very bright. The welding of rails into continuous lengths for street railway purposes is rapidly coming to the front. Two machines are now in operation in Brooklyn, under a contract to weld one hundred miles of track within a year. The welding of projectiles, too, is now exciting much attention abroad, and there have been developments in various directions affecting almost every branch of metal industry. One company has now more than one hundred plants in operation, saving much money, and with greatly superior results over the old forge methods. The machines now in use take in a range from the smallest wire to sections of twenty-five square inches, the former requiring delicate automatic apparatus, and the latter machines weighing over thirty tons. The variety of uses to which electric welding has been put covers almost the entire range of metal working. Among the articles made by the process are axles and tires for carriage work, carriage irons, of which one firm in the first three months of 1894 welded 270,000, fifth wheels, pip? for refrigerating and other purposes, tires for bicycles and other small vehicles, agricultural implements, wire cable, printers' chases, heavy waggon axles and tires, wire hoops for wooden packages, reamers, twist drills, and heavy railway forgings.