

Ergotinine (Tanret's).

Upon request of the Pharmacological Institute of Strassburg, Gebe & Company have made many attempts to prepare this alkaloid, to which the oxytoxic effects of ergot are ascribed, and have at last succeeded. It is a substance which is very readily decomposed, being quickly altered by alkaline reagents, or even by a moderately elevated temperature. It soon assumes a red-brown color. Dr. Kober, of Strassburg, writes to Gebe & Company in respect to it as follows:

"You can scarcely realize how you have delighted my pharmacological heart by your ergotinine, for its action is most extraordinarily strong, and such as I never have attained in my own experiments. Frogs are placed by one-twentieth milligramme into a deep toxic condition, which is remarkable by its close resemblance to that produced by veratrine, inasmuch as the muscles—although promptly contracting—require from four to six hours for again relaxing. This peculiar condition lasts many days. A few milligrammes administered to Guinea pigs produce a condition resembling strychnine poisoning, inasmuch as they exhibit convulsive twitchings of the legs and dyspnea, and finally die from paralysis. The intoxication may be very nicely studied in rabbits, which are affected already by injections of one-tenth milligramme into the circulation. At first the cardiac plexus is excited, then follows a stage in which the blood pressure is increased. This discovery is of the greatest importance, since it has been suspected, for the last twenty years, that ergot increases the blood pressure and thereby acts upon the uterus. Larger doses diminish the blood pressure in rabbits permanently, produce cramps lasting for hours, and cause death by asphyxia. It is remarkable that the alkaloid has no effect upon chickens, although the latter are very easily affected by ergot, and may be killed by feeding three times with ten grammes of the crude drug."

The hypodermic dose of the substance is ten to twenty drops of a solution containing one milligramme in one cubic centimeter.

This preparation, says *New Remedies*, is the most expensive drug so far quoted, since at lowest rate it must be put at 200 marks (50 dollars) per gramme (or 3½ dollars per grain, over \$1,300 per ounce). Yet even this price is seven and one-half times lower than that charged by the French manufacturer, namely, 1.50 marks (36 cents) for one milligramme in solution.

CHEMICAL VAPORIZER AND DEODORIZER.

Our engraving shows a compact and portable apparatus for the radical destruction of sewer gas, foul air, and fungous germs in the atmosphere. This device practically applies the latest scientific discoveries of Prof. Robert Koch, and others, on treating by inhalation diseases caused by germs of sewer fungoid, for continuously charging the air with chemicals which produce artificially any desired atmosphere considered essential by physicians, for the prevention or treatment of diseases.

This apparatus enables practitioners to administer by inhalation active volatile drugs during the night, bringing within the range of curable complaints several fatal diseases which have heretofore resisted scientific treatment.

The apparatus consists of a small case containing the vaporizing cylinders and a spring actuated fan which draws in air and forces it through the cylinders containing the remedial or disinfecting agent.

The air thus charged is poured into the apartment in a continuous stream.

The vaporizer demands but little attention, and the chemicals used are inexpensive. All of the formulas or drugs recommended for use with the apparatus are furnished prepared for immediate use.

As the vaporizer makes no noise it can be put in the sleeping room, or it may be placed on a bracket in the hall on the floor occupied as sleeping apartments.

For the use of hotels and office buildings, a large chemical vaporizer, capable of supplying the entire building, is placed in the basement. Connecting pipes leading from the generator carry the vapor to the ice boxes, supply rooms, water closets, halls, sleeping rooms, and other locations.

This apparatus may be employed in diffusing grateful and invigorating perfumes, as well as the remedial and disinfecting agents. If desired, a double effect may be secured by charging the cylinders with different agents. The apparatus seems well adapted for the rational treatment and prevention of zymotic diseases.

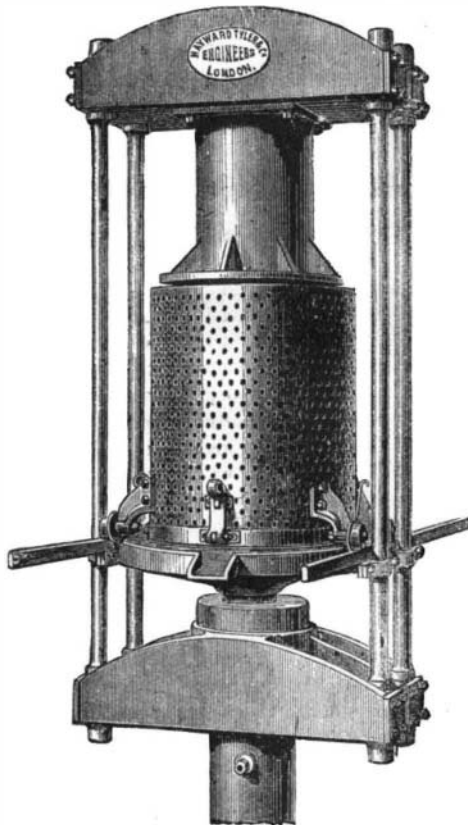
Further information may be obtained by addressing the Chemical Vaporizing and Deodorizer Co., 94 Greene Street, New York city.

MORITZ GROSSMAN, in his Year Book for 1883, gives the following recipe for cementing rubber or gutta-percha to metal: Pulverized shellac, dissolved in ten times its weight of pure ammonia. In three days the mixture will be of the required consistency. The ammonia penetrates the rubber, and enables the shellac to take a firm hold, but as it all evaporates in time, the rubber is immovably fastened to the metal, and neither gas nor water will remove it.

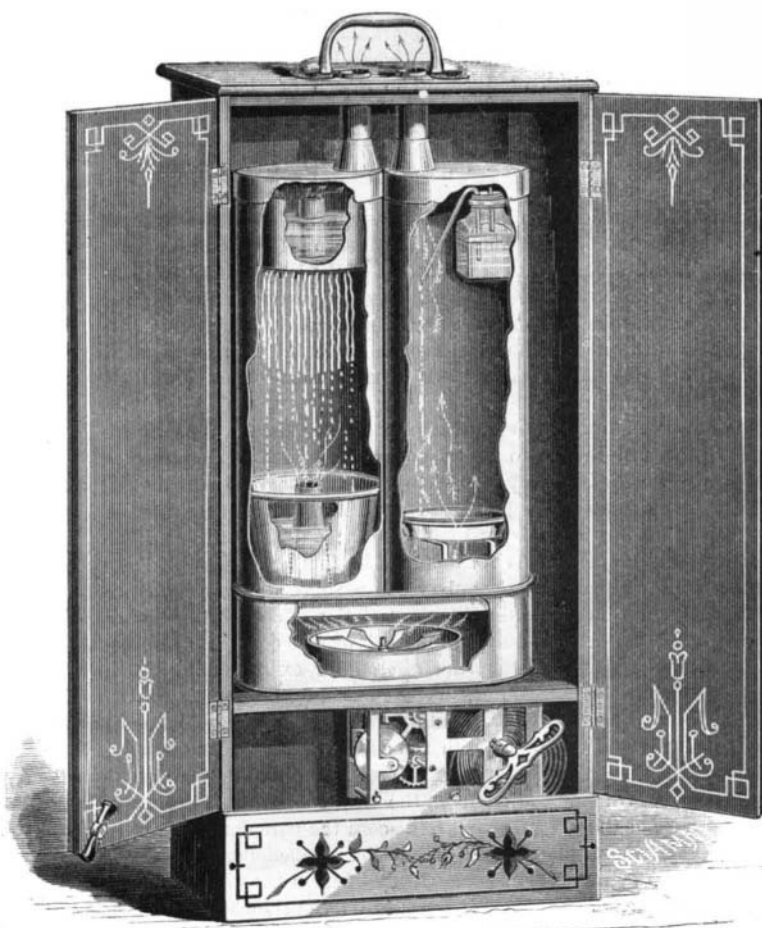
IMPROVED HOP PRESS.

Various presses have been contrived at different times for extracting the wort from spent hops, but as a rule the objections to them have been their very complicated character and consequent expense.

The press here illustrated is fitted with two circular wrought-iron boxes, holding about six bushels each, which are filled and pressed alternately, and are arranged to run in and out of the presses on wheels and rails. The pressed hops are discharged from the bottom of the press, which opens

**IMPROVED HOP PRESS.**

downward like a door, and can be run into any suitable receptacle, or through a chute into the yard. One of these new hop presses has just been constructed for and fitted at Messrs. H. & G. Simonds' Brewery at Reading, and has proved highly successful. The pump which works the hydraulic press is driven by a strap from the main shafting, so that the attendant has nothing to do but open and close the valve; but the pump can also be made to work by hand.

**DR. HUBBARD'S CHEMICAL VAPORIZER AND DEODORIZER.****Destruction of Steam Boilers.**

The Dusseldorf Society for the Supervision of Steam Boilers consider the following to be the chief causes of the destruction of steam boilers:

The corrosion of steam boilers on the outside is principally due to the action of the beating gases and of the moist masonry. The products of combustion very frequently contain sulphurous acid, which in contact with moisture is gradually converted into sulphuric acid, and as such corrodes the iron. The moisture of the brick work causes direct rusting. With regard to interior corrosion, the following points are to be noted:

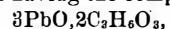
When an upper and a lower boiler are used, the feed water is let into the latter, which the fire gases reach last, and therefore is not so hot as the other. It is often noticed that the separate plates of this boiler are pock-marked with little grooves. When fresh water containing air is warmed, little bubbles of air containing much oxygen form, and as there is very little motion in this part of the boiler, they adhere to any rough spots on the iron and are destructive to it. It is easy to see that rough iron is attacked more readily than smooth; and of course, the action is most powerful in the grooves themselves. If steam bubbles attach themselves to any spot whatever in a steam boiler, where the temperature is not very high from its being heated with hot gases only, rusting will take place. Here too the atmospheric air in the feed water would be the destructive agent.

Hence, if care is taken to keep the water in motion circulating around in the boiler, the chief cause of internal corrosion will be for the greater part neutralized.—*Polyt. Notiz.*

Detection and Estimation of Lactic Acid.

R. Palm says that when lactic acid is added to a clear or slightly opalescent solution of basic acetate of lead, i. e., acetate of lead mixed with five or six parts of alcoholic ammonia, a white amorphous precipitate of plumbic lactate will be immediately formed.

The same precipitate is produced when acetate of lead is added to a mixture of lactic acid and alcoholic ammonia. The precipitate is soluble in a large quantity of water, in acetic acid, lactic acid, and caustic alkali, but insoluble in alcohol, and must therefore be washed with alcohol. It dries to translucent scales like dextrine. After heating with fuming sulphuric acid and igniting, it left behind 79½ to 77½ per cent of oxide of lead, so that its composition corresponds to a basic salt having the composition



which requires 78.8 per cent of oxide of lead.

Lead for the Examination of Drying Oils.

The lead is obtained by precipitating with slips of zinc a 10 per cent solution of lead nitrate acidulated with a few drops of nitric acid. The precipitate obtained is agitated for a few moments with distilled water, washed by decantation two or three times; thrown into a funnel plugged with glass wool, washed quickly, first with alcohol and then with ether, and dried in a vacuum over sulphuric acid. To expel traces of ether, it is lastly exposed to the air in thin layers for about two hours.

For the examination of an oil, one gramme of the lead is spread out in a rather large watch-glass, and the oil in question is allowed to fall drop by drop from a pipette, drawn out to a point, placing the drops in such a manner that a space may remain between them. The lead gradually sucks up the oil, so that every fragment is coated with an excessively thin film of oil. If the oil has been added in too great quantity it forms a thick coating, which dries at the surface, and forms a solid pellicle, which protects the lower part.

About 2 parts of oil at most should be used for 3 parts of lead. The watch glass should have been first tared; the lead is then weighed, and afterward the oil added. The watch glass is then exposed to a mean temperature and to full light, which materially aids oxidation. With drying oils the increase of weight sets in after about eighteen hours, and is generally at an end after three days, when it remains constant.

With non-drying oils the weight generally does not begin to vary until after four or five days. Numerous series of experiments have shown the following numbers as the limits of the increase of weight of oils in presence of finely divided lead: Linseed, 14 to 15.5 per cent; nut, 7.5 to 8.5; cotton, 5 to 6; beech nut, 4 to 5 per cent. The non-drying oils give an increase of weight from 1 to 3 per cent, and it is only after the lapse of some months that we find an increase of 4 to 5 per cent.—*A. Livache.*

The Petroleum Fields of the World.

The relative importance of the oil fields of the world are succinctly stated as follows, in the July *Century*, by E. V. Smalley, in his graphic and fully illustrated article on "Striking Oil:" "Nearly all the petroleum that goes into the world's commerce is produced in a district of country about a hundred and fifty miles long, with a varying breadth of from one to twenty miles, lying mainly in the State of Pennsylvania, but lapping over a little on its northern edge into the State of New York. This region yielded, in 1881, 26,950,813 barrels, and in 1882, 31,398,750

barrels. A little petroleum is obtained in West Virginia, a little at various isolated points in Ohio, and a little in the Canadian province of Ontario. There is also a small field in Germany, a larger one, scantily developed, in Southern Russia, and one still larger, perhaps, in India. The total production of all the fields, outside of the region here described, is but a small fraction in the general account, however. Furthermore, the oil of these minor fields, whether in America or the Old World, is of an inferior quality, and so long as, the great Pennsylvania reservoir holds out, can only supply a local demand in the vicinity of the wells."