



Our patent 3-second order-filling machine. Father Time has to move lively to keep up the pace.

## A Shipment Every 3 Seconds.

Such is our record during the past month of December. A shipment every 3 seconds; twenty a minute.

Two million customers are on our books—surely there must be something in our system. Why do these two million people send us order after order—can it be that they are all misguided? We think not; they have found by experience that we can supply them with all their goods at wholesale prices—save them money and give them a better grade of goods.

### DO YOU BUY WHERE YOU CAN BUY BEST?

Are you entirely satisfied with the goods you get and the prices you pay? We want you to try us—to send us a trial order and test our ability to satisfy you in every particular. We have special catalogues on almost every line you can think of. Tell us what kind of goods you are interested in and we will send you, absolutely free, a handsome, illustrated catalogue quoting wholesale prices. Be sure to mention the one you want.

Furniture—Farm Implements—Vehicles—Sewing Machines—Hardware—Crockery—Glassware—Stoves—Sporting Goods—Harness—Drugs—Stationery—Toys—Leather Goods—Musical Instruments—Silverware—Carpets & Rugs—Underwear—Groceries—Bicycles—Baby Carriages—Dry Goods—Photographic Goods—Notions—Books—Shoes—Millinery—Cloaks—Shirts—Furs—and Men's and Boys' Suits (both Ready-Made and Made-to-Order) including Samples.

## Montgomery Ward & Co., Chicago

Special Note:—We will build a buggy to your order during this winter and ship it to you next spring. Only \$5.00 deposit required. Write for circular. Our Baby Carriage catalogue for 1902 is just out. We will send it upon request.

### SCIENTIFIC MISCELLANY.

Petroleum ether has been used for a thermometer down to the temperature of liquid air, at which it is still liquid.

The tea-pills—fourteen to the ounce—of a caucasus grower are simply compressed tea in a convenient form for travellers.

The cubit of the Old Testament Hebrews equalled an English foot and one-fifth, if the latest evidence proves reliable.

Remains of a pygmy race that inhabited southern Germany, as well as Switzerland and the Pyrenees, are among the late prehistoric finds. No skeleton is longer than 55 inches, many being smaller.

Of two specters made the subject of a recent biological paper, one was the shadow of a person that had been thrown on a cloud of mist by a light from a window, and the other was a similar shadow cast on a passing dust cloud by an electric lamp. As mist and dust disappeared, the effect was of vanishing figures.

Adrenalin, the newly-discovered active principle of the suprarenal glands, will not become a common drug. Every pound made requires the glands of 14,000 cattle, each single gland weighing but two-fifths of an ounce and yielding but a quarter of a grain of adrenalin. The new product has promised much as an astringent, opium antidote, etc.

The formation of varnish, long supposed to be an oxidation process, is otherwise explained by Dr. Kronstein, a German chemist. He finds that the constituent elements and their proportions remain the same, but the molecular weight becomes changed, the process being that known in chemistry as polymerization. Linoleum, so important for linoleum, is polymerized linseed oil in its highest stage.

The startling phenomena in Perseus have opened a fertile field for speculation. A British astronomer assumes that different portions of the meteoric matter forming the nebula have been successively lighted up from the flash of the explosion that produced the "new star," and that the apparent expansion must have had the velocity of light. On this hypothesis, the new star is so distant that its light requires 313 years to reach us!

Coloring glass by penetration, as M. Leon Lemal calls his interesting process, offers varied and attractive results. Silver salt, in small quantity but varying with the intensity of color desired, is placed upon the surface of the glass, which is then heated to 500° or 550° C, baking for five minutes giving a yellow stain to a depth of 1-150 of an inch, which is increased to 1-15 of an inch in eighteen hours. The yellow shows a beautiful greenish or bluish fluorescence in reflected light. Lace patterns can be transferred to glass by this method, colored monograms may be obtained, and even collodion negatives may be printed in various colors. Silver and

copper give a red, while gold and iron salts have been used for other effects.

The smoke-consuming plan of M. D. Altoff is being satisfactorily tested in Belgium in several steam-engines and gas-engines up to 50 horse-power. The smoke is driven by a fan into a filter of wood, coke, tow, or other porous material, over which passes a continuous stream of petroleum, alcohol, or other liquid hydrocarbon, and it emerges as a combustible gas of great heating power, which may be used for producing steam or driving gas-engines. The filter, with the collected soot, etc., also forms a valuable fuel, this "pyro-gas" smoke suppression giving great economy of combustion.

The novel violin of Mr. Charles Stroh, of London, is claimed to have been perfected on scientific principles after five years of experiment. The belly of the ordinary instrument is replaced by a circular diaphragm of aluminum, which is loosely held in a suitable holder and responds freely to every vibration of the strings, and the sound is distributed through a trumpet resonator of aluminum at the side of the diaphragm. The volume of sound is stated to equal that of three violins, while on first playing the beautiful tone has the mellowness that usually comes from age.

Some electro-optical experiments lately made by Dr. Emile Bose, of Dresden, suggest novel possibilities, practical and theoretical. After long