

Half acre hole in heart of Portland



Wreckers and Excavators at Work Huge Excavation and Costly Concrete Work Required to Support Newest Department Store Building

Written for The Journal by Will T. Kirk.

THE deepest and biggest basement in Portland was completed recently. It covers practically half an acre of ground and is 21 feet deep. It is the basement for the new Lippman & Wolfe building, being erected on Fifth street, between Washington and Alder, by the Hurley-Mason company.

In fact, the basement is a big, two-story underground building. There are to be two cement floors—one for the basement proper and the other for the sub-basement.

For four months the public was an interested spectator of the work being done in preparation for the superstructure of the large building. Crowds daily lined the banks of the great hole in the ground and many were surprised at the enormous amount of work that had to be done before the time came for the erection of the massive steel beams.

While the work was going on the half acre had the appearance of a mining camp after a big discovery. Men and machinery never rested from making the dirt fly. The work was kept going day and night, with over 100 men on a shift. At night the yawning hole was illuminated by powerful arc lights. The sight became intensely interesting as the hole became deeper and the men grew smaller to the onlookers on the banks above, whom the workers called the gallery.

Work of raising the old buildings on the site, one of which was a substantial brick structure, was begun July 1, and the work on the excavation for the basement was started during the latter

part of that month. About 25,000 yards of earth were removed in the hungry steam shovels, which burrowed their way with great mouthfuls. This is about five times as much earth as is usually removed for the basement of an ordinary business building covering a site 100x100 feet.

As the steam shovel gnawed away and gradually lowered itself, spectators began to wonder how the builders were going to get the engine and the shovel out of the pit it had dug for itself. The problem continued to worry them and was the subject of frequent discussions. When the shovel reached the bottom and looked like it was hopelessly beyond ever being brought to the surface again, one of those who had watched its descent day by day could restrain his wonderment no longer, so he ventured to ask a foreman how in the world he did intend to get the machinery out again.

"Why, we don't intend to take it out," the foreman replied. "It is an old shovel, anyway, and has just about served its time, so we are going to get it to working in one corner of the excavation and let it dig a hole to bury itself in. Then we will cement over the top of the hole."

The story gained considerable circulation among the gallery audience. But all doubt was allayed when the steam shovel was separated into three parts and hoisted to the surface.

Three Crews Employed.

During much of the time three entirely separate crews of men, of distinct crafts, were working on the job at the same time. When the wrecking crew

had removed one end of the old building the excavation crew began work. This latter crew reached the bottom of the basement at one end before the wrecking crew had finished at the other. The excavation crew moved over to the middle of the half acre, and the concrete workers began where the excavation crew left off. By having one crew follow on the heels of another there was not the slightest loss of time.

The bottom of the basement is only three feet above the level of the Willamette river at its low stage, and it is about 15 feet below the level of the river when the spring freshets have filled the banks of the stream full. This made it necessary for the basement to be constructed water tight, and for the bottom of the basement to be made strong enough to withstand considerable pressure from beneath.

For that reason the floor of the sub-basement was constructed with a solid surface facing downward. Most of the ground is a layer of smooth concrete. On top of this is laid several layers of burlap and waterproof paper, put down in a hot asphalt mixture. On top of this are laid reinforced concrete slabs and beams, running into the column feet. Between the beams is sand and gravel, and on top of it all is a heavy concrete floor.

The sub-basement floor is built just upside down from the way a floor is usually constructed, which prepares it to withstand the pressure of the water from beneath. The same waterproof material used in the floor is carried up through the walls of the basement on all sides.

Another feature that greatly inter-

ABOUT READY FOR SUPER-STRUCTURE



EXCAVATION NEARING COMPLETION

ested the gallery spectators, and which was no small engineering feat, was the work of underpinning the adjoining buildings on the other half of the block. As the basement of those buildings did not

extend as deep as the new basement, something had to be done for the protection of the structures.

Holes, similar to mine shafts, were sunk about eight feet apart to the depth

of the new basement and concrete pillars were built under the adjoining buildings. When these were set the earth was removed between them and the intervening space filled with con-

crete, making the wall solid. Above the sub-basement floor will be the floor of the basement proper, thus providing two underground stores for this great structure.

Health and Efficiency

CONDUCTED FOR THE JOURNAL BY LORAC LITTLE.

DR. ELMER LEE, in Health Culture, recently stated that dietetic abuse is the real cause of all forms of cholera. The victim being, as Dr. Charles E. Page says, "the victim of his own puts it, 'simply a teaspoon'." The same, says Dr. Page, is true of typhoid fever, in proof of which he offers the results of his 27 years of practice, during which he never has had a typical case of typhoid fever where he was called at an epidemic stage of the disease. Here is the way he summarizes his treatment:

"The whole secret of this very extraordinary experience lies in the fact of my application of the fact of the early convalescence is safely secured, together with the employment of simple, moderate hydrotherapy; never any ice packs, be sure, nor any form of rough house treatment."

He continues: "When we look this matter squarely in the face, where can we find the least reason for typhoid inoculation, since nothing of that sort can be any theory of reasoning be supposed to prevent the individual from mistreating his stomach and bowels?"

Dr. Page says, does this latter imply gross feeding; all that is needed is that the patient be a dyspeptic, for dyspepsia and consequent putrescence of food substances, produce the same result as the general order 134 of the war department, dated September 20, reads: "The typhoid prophylactic will be administered to all officers and enlisted men in the army under the age of 45 years who have not already had a well defined case of typhoid fever, and who are on duty at the stations where a medical officer is available for this purpose." It also provides for inoculation of recruits and soldiers in isolated places.

More strength of character could be developed if more stress were laid on compelling the child to do things irrespective of whether they are interesting and pleasant or not. School training alone is not to blame. Home training is a greater factor. . . . One of our first maxims must be to demand strict obedience. That kind of obedience that needs no argument, no persuasion. When we say, 'Do, it must be done and nothing else.' The explanation may come later if necessary. It will then do much more good showing the child the command was right and inculcating confidence in parent or teacher.

"We don't have to carry this blind obedience to excess. I understand the importance of bringing out the individuality by always catering to the child's liking of things, by making every task interesting? We bring out and strengthen what later may become a degenerating tendency, but we do not build up and develop character by indulgence."

This is commended to mothers who cannot feed their children properly, because "Johnny never eats vegetables," or "Kittie would starve rather than eat brown bread."

EXCESS of carbonaceous food, Dr. Charles McCormick told an audience in Portland the other night, is enough to cause rheumatism, arterio-sclerosis, erysipelas and other skin affections, migraines, appendicitis and even smallpox.

This is in line with what this department has been telling its readers for a year and more. Bread easily becomes the staff of death instead of the staff of life, if systematized with carbon and its products in imperfect digestion must have a clearing out, and nature follows lines of least resistance.

If you would feed yourself for health you will eat plenty of "grass"—that is, uncooked celery, onions, cabbage, and the like. They will prevent the accumulation of waste and purify the blood. This food question is so easy of demonstration that one can verify Dr. McCormick by confining himself to starches for a short time. One need not carry it to the point of actual illness. But confine yourself to starches, fats and sweets only for a few days, and if you are in the habit of feeding yourself properly you will quickly notice the effects. You will feel less alert, and whatever weakness you have had will begin to bother you. If ever subject to headaches, they will increase. If rheumatic, that complaint will wake up. If your memory is not the most perfect, you will notice it troubles you more than usual. Whatever may be your weak points there you will notice the effects. But the deterioration will be general, and if such a diet is continued long enough serious illness will follow.

The point is not that bread is to be banished, but that it is to be used only as the backbone of the diet. (By bread is meant grain foods.)

When we know that this kind of diet (that is, too much starch) is the most fruitful cause of colds in all forms, of fevers, of the stiffness and brittleness of rheumatism and the old-age ar-

terio-sclerosis, what absolute folly to waste time upon alleged cures which not only do not touch the cause, but have no relation whatever to it.

There is absolutely no need of disease if we will live right. There can then be no genuine cure that does not involve right living. The drug stores are full of palliatives and old ladies are overflowing with advice for the cure of diseases by salves and teas and

physic. The proposition is one of attempted fraud, however innocent it may appear. Live as you please and do penance by taking a dose. Nature, however, does not thus permit aims. Ill grows from within. He is made ill from within. He is made well from within. Give the life force the proper materials, use the life force aright, and health is as inevitable as the rising of the sun.

It is our part, then, to learn how to

live. Nothing else is so important. No table of cures unrelated to cause can have any interest for us, except as relics of superstition. This department has in the past and proposes for the future to do all that it can to instruct and inspire to healthy living. The world abounds with perverse minds bent on cheating, on getting something for nothing. They who do this in one field are apt to do it in other fields. He who denies the moral quality of the

universe thinks he can cheat his neighbor and his Creator. Let us pity him, but refuse to cater to him. His troubles are ripening every hour.

of apathy under the influence of breathing exercises. As the lungs are developed the other vital organs are strengthened, and along with this change comes a change in the brain. The cerebellum increases in size and the face alters in shape to correspond. A weak cerebellum shows in the face in a delicate chin and lower face. The cultivation of the lungs and chest actually alters the lower part of the face in marked degree in many cases.

If the author of this book had not allowed himself to be carried away by dislike of the manner of breath-culture people, he would have been able to admit the force of their contention, and would not have led into the untenable position that lung exercise does not increase lung power and through lung power increase the health and vigor of the man.

The fact is, as has been pointed out here, before, that our work and our thoughts frequently check our breathing, and when this occurs for any length of time our whole organism becomes weakened to match. The obvious remedy is to attend to full breathing and when we do not do it habitually, then deliberately practice it for short periods daily, and gradually a better habit will be built up. Experience of the benefits of breathing exercises will stimulate to extend the practice and will convince anyone of the marvelous results within reach of anybody who will use this simple device.

A GOOD deal of the physical weakness of men and women comes from flabby methods of training in childhood. Hence, Dr. C. F. Weege's article on "Graft in Education," in Mind and Body for October, is pertinent to our theme.

Dr. Weege is connected with the Carl Schurz high school, Chicago, and as an observer has the combined advantages of the trained physician and the practical educator. He deprecates the modern tendency of making all tasks easy and attractive to the child, claiming that this results in want of moral stamina. "Physical education shows the same tendencies," he says. "Everybody would like to get healthy and strong if it only were not so much like work."

Neither physical, mental nor moral education can or should be all (or largely) play, he maintains. Work rarely causes breakdown. Rather than use the natural eases for weakness such as rest, exercise and recreation, we encourage idleness. . . . At least in our large cities we have ample proof that the young men and women lack firmness of character, lack the will power to fight temptations. They drift from nickel shows to pool-rooms and bowling alleys and cards, and when the circuit is completed they begin over by increasing the stake. These are the most obvious results; less common are good manners at all times, politeness and good behavior, manliness, frankness, standards of

Drilling With Diamonds. DIAMOND bit for rock drilling is quite an expensive article. Its value, however, will undergo fluctuations, dependent upon the price of the diamonds. Perhaps \$100 is a fair value for a bit. The diamond used is exceedingly hard—harder than those usually used as jewelry. The carat price is considerable, averaging, say, at \$60 per carat. The diamonds used will weigh from one to two carats, so that eight have a value ranging from \$480 to \$960, on the average. The loss of a bit means so many diamonds gone and may lead to difficulty with the hole. The diamond is not tough, but brittle. It will withstand heavy pressure if applied evenly and without shock. It can readily be seen that drilling through seamy rock may become quite unfavorable. If there is much quartz present the abrasion may become excessive. Under ordinary conditions, however, the wear on the diamonds, while considerable, is by no means prohibitive.

Traveling Stones. From Hap's Weekly. "Traveling stones," from the size of a pea to six inches in diameter, are found in Nevada.

When distributed on a floor or other level surface, within two or three feet of one another, they immediately begin to travel toward a common center, and there lie huddled like a clutch of eggs in a nest.

A single stone removed to a distance of three and a half feet, upon being released, at once started with wonderful and somewhat comical celerity to join its fellows.

These queer stones are found in a region that is comparatively level and little more than bare rock. Scattered over this barren region are little basins, from a few feet to a rod or two in diameter, and it is in the bottom of these that the rolling stones are found.

The cause for the strange conduct of these stones is doubtless to be found in the material of which they are composed, which appears to be lodestone or magnetic iron ore.

First American Letter Box. From the National Magazine. A little more than a half century ago the letter box was unknown. The inventor was Joseph William Briggs, nephew of a former governor of Massachusetts, who, as head clerk in the Cleveland postoffice, studied the needs of patrons, and after corresponding with Postmaster General Dennison upon the subject, took a train for Washington, bearing a pasteboard model of the letter box under his arm. The postmaster general saw the merits of the plan

New and Universal in Popular Science

and appointed Mr. Briggs as special agent to establish the letter box and letter carrier system.

The first letter box was attached by clamps to a lamp post that stood in front of a Cleveland drug store, and not a year had passed before 52 different cities had adopted the system.

Rocking Stone of Argentina. From Popular Mechanics. About 370 miles south of Buenos Ayres, in the Sierra Tandil range of mountains, is a 700-ton rock so delicately poised that it can be rocked

buffalo of North America practically ceased to exist, except for a few in the Yellowstone National park and a handful in the wilds of Athabasca.

Origin of Lace Making. From the Craftsman. A romantic legend is still current among the peasants of Europe concerning the origin of lace. As the story goes, a lover who could offer his betrothed no costly gift one day brought to her a leaf which he had plucked in the forest.

She accepted it as a true token of love and preserved it with care. In time the lover went away—to the wars perhaps—and never returned.

The maiden prized the leaf then as a sacred treasure, and when she found only the delicate veining left for her keepsake she took needle and thread and tried to copy the fairylike web. And thus was made the first bit of real lace.

Wireless Government Monopoly in France. From Popular Mechanics. Wireless telegraphy is a government monopoly in France and in private individual according to Cosmos, a French scientific publication, may possess either a sending or receiving station. Consequently, the time signals sent out twice every 24 hours from the wireless station in the Eiffel tower, although free to anyone having a receiving apparatus and living outside the boundaries of France, are not available for private individuals in France.

Frenchman pays for the service and his neighbor within a radius of about 1200 miles reaps the benefit.

Illumination in China. From Popular Mechanics. The Japanese have installed an oil refinery to handle the products of the petroleum wells of northern Shensi, China, and the larger cities throughout central Shensi are now being supplied with native kerosene at 30 cents per gallon, competing with foreign kerosene at 48 cents per gallon. The supply of petroleum is said to be inexhaustible, and it is believed that, as soon as western China is tapped by modern transportation facilities, electricity as well as kerosene will take the place of rapeseed oil for illumination purposes.

Throughout western China, rapeseed oil has served, almost universally for centuries as the only illuminant, the little taper in the oil vessel giving but a dim flickering light. But today, Talyuan is illuminated with electricity, Chungking is installing a \$100,000 electric plant and Sianfu and Chengtu, as well as several other large cities, are being lighted with patent kerosene lamps.



Courtesy The Sketch, London. A 700-ton stone which looks every moment as if about to fall, yet may be gently rocked.

gently enough to crack a walnut without crushing it. It looks as if every moment it were about to fall. Its surface, and that of the surrounding rocks, is carved all over with the names of tourists.

Havoc of the Hide Hunters. From Outlook. In 1881 the buffalo hide hunters shipped 30,000 buffalo hides to the east. The next year the number was 200,000 and in 1883 40,000. Only 300 were reported in 1884 and after that there were none at all. In 1883 Sitting Bull and his band, with some white hunters, killed the last 10,000 of the northern herd.

The last survivors, 28 in number, were killed on the Big Porcupine in 1886, and were mounted for the National museum. With that the wild

LADY writes that though she has been dieting, breathing, exercising and sleeping, to improve her digestion, yet awhile after eating she continues to have eructations of gas and sour food from her stomach. And what is the remedy? There is no gain in continuing to fill the stomach with food that sours instead of digesting. Stop. Omit one meal, breathing vigorously in the open air as much of the time as possible. Breathing is one of the best forms of exercise. It exercises the internal organs, saturates the blood with oxygen and quiets and strengthens the nerves. For weak persons—those with low vitality—it is better than too much general exercise. After skipping a meal, eat very moderately, of, say, two articles of food: such as baked fish and raw vegetable salad, or one slice of buttered bread with lettuce, or some cheese and fruit, or baked potatoes with cream and raw onions. Consult the taste in your choice, but look out for combinations similar to these. Chew every bit to a finish. Take a nap after eating if the least sleepy of fatigued. Then if your stomach takes care of that meal, it should be hint for future action. If it does not, skip two meals and eat a light two-kind meal. This plan followed with judgment will generally bring relief. But remember there are many factors to be considered. Get them all right and the product is certain. You alone can know whether they are right, and you cannot know unless you bring your mind to bear upon the matter patiently, candidly and with whole-minded concentration. Forgive. "If the mind of man is turned upon any given subject with a sufficient concentration, he obtains illumination with regard to it sooner or later."

Primitive iron furnaces found in Sweden are said to date back 1000 years.