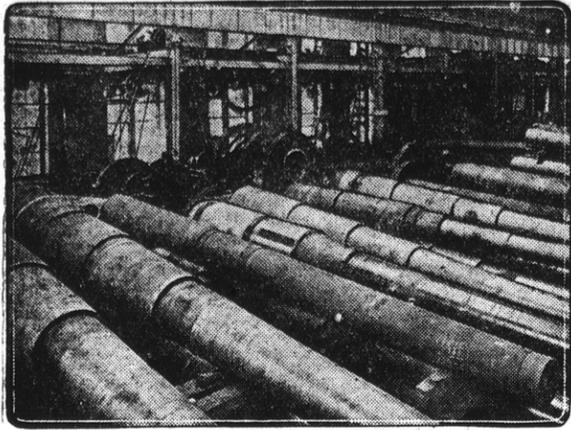


MAKING BIG GUNS



SCENE IN ORDNANCE FACTORY

FROM the old-fashioned castiron gun with a range reckoned in feet to the great gun of modern times with a range of miles is a far cry, but the results of experiments by scientific men of all nations during the past 100 years have given us today what is practically perfection in the art of gunmaking.

Over 100 years ago guns were cast in solid iron or a combination of bronze and iron and were always liable to explode if overcharged, due not to any fault in the material, but solely to the fact that they were cooled from the outside and in consequence when the gun was fired the inside or bore would expand quickly, cracking the whole piece.

A later method was used by which the inside was cooled first and solidifying, was compressed and supported by the contraction of the exterior when it was cooled down.

Still later a system of building up guns was devised whereby each portion of the metal was made to bear a fair share of the strain.

Nearly all big guns are now made entirely of steel made by the open hearth process.

Months are required to build up one of these guns which are built in sections, i. e., the liner or barrel, the jackets which fit over the liner and the breech block which closes the



Inspecting Breech Mechanism.

opening through which the projectile is thrust.

The jackets add extra strength to the portion of the gun in which the explosion takes place.

The composition of the metal varies little; the greatest care being taken to produce a metal free from bubbles. After the ingot is cast and cooled it is removed to a large furnace heated by gas or oil, securely bricked in so that very little heat is lost, and subjected to a steady flame which gradually heats it to the center.

Forced into a Bar. It is then taken to a press, with a pressure of 10,000 tons, where from a great block it is by degrees reduced to a long bar about 60 feet in length and two feet in diameter. This is done while the metal is hot.

From the press the forging as it is now known, goes to the wood annealing, where it is given a bath of fire entirely of wood, and brought quickly to a high temperature.

This temperature is held some time after which the forging cools slowly in air.

The forging next goes to the machine shop, where it is placed upon a lathe and receives its first rough machining over the outside. It is then bored to the proper size on a boring lathe. The boring is a matter of weeks and the boring bar once started requires little attention other than the changing of the cutters on the end, water running through the bar flushes out the chips and keeps the cutters from heating.

When bored the forging is known as a liner and removed to the oil annealing shop, where it is stood upright in a furnace and made hot with oil flames. While hot it is slowly lowered into a pit of oil and allowed to cool.

Absorbing the oil the metal becomes very tough, allowing it to expand but little when filled with the gases which force the projectiles out.

Back again to the machine shop it goes, where it is machined to the true size.

The jackets are made and treated in exactly the same manner, with the exception of the oil bath.

When the parts are ready they are carefully fitted together and bound with hoops of bronze or copper. The breech of a gun is the most important part, for unless it fits perfectly the gases will leak causing back firing.

Nearly all guns are rifled to give greater accuracy in firing.

Rifling is a system of grooves in the surface of the bore which gives a rotary motion to the projectile which revolves while passing through the air, thereby lessening the resistance. A gun being entirely built is thoroughly polished by hand, the muzzle closed with a wooden block, the whole gun oiled to prevent weather damage and shipped to the proving grounds to be tested by the government.

If up to the test requirements it is accepted and goes to help make up the armament of one of our modern seafighters.

GRANDMAS HELD THE FLOOR

Occasion Proved That Youth by No Means Had a Monopoly of Joys of the Tango.

Dance-mad sixteen is comprehensible, but dance-mad sixty-six—well, that's a different thing altogether. The one is natural, the other isn't. A New York paper describes the recent opening of "the newest dancing place in the city, the Castle House," as a scene of many remarkable features.

The older the men and women the wilder the dancing. Gray-haired women had partners who still had their first vote to cast, while the plunk tea variety of bald men took debutante partners in mastering the steps of the Argentine. Hesitation and other dips and trots and tangos.

The older the women, the more adaptable their costumes for tangoing. The gowns were all short, of course, with a split in front or back, and many of the snowy-headed women long past sixty had their split clear to the knee.

The plan was to have a place where young girls could get unchaperoned in the afternoon, but most of the young folk who arrived after five had to enjoy the sport from the side lines. Their mammas, aunts and grandmothers had the center of the floor and all the available young men by that time.

Lottery Romances. Lottery tickets, such as that which has just won a Staffordshire miner a prize of £46,000, have always brought romance. A few years since the drawing of the annual Christmas lottery at Madrid brought a poor mechanic £20,000, and on the same occasion a crossing sweeper won £8,000 with a ticket given him by an old lady for assisting her across a busy thoroughfare. Equally romantic was the experience of a poor shopkeeper, a widow, in a Berlin suburb. One day a shabbily-dressed man entered her shop and, begging permission to light his pipe at the gas jet, produced a piece of paper, which he used as a spill and then threw, half charred, on the floor. When sweeping the shop the widow, picking up the spill, found it to be a lottery ticket. A few weeks after it won her £10,000.—London Chronicle.

Dog Ghost Revealed Secret. The most extraordinary of dog ghosts was the Dog of Mansie. It was a dog ghost, but not the ghost of a dog. According to the account given to Bishop Rattray by William Soutar, the Perthshire man who saw it in 1728-30, it first appeared vaguely as something like a screeching fox, which dogs refused to chase. Next time it was a big, dark gray dog, which touched him on the hip, and the his remained painful all night. After several such appearances the phantom dog took to speaking, and confessed itself to be David Soutar, who had killed a man 35 years before and now appeared as a dog because a dog had been with him when he did it. Human bones were found buried under a bush at a spot indicated by the ghost.—London Chronicle.

MONKEYS EASY PREY MIGHT HAVE BEEN A BLUFF

JUNGLE LEOPARDS HAVE NO TROUBLE GETTING A DINNER.

Mere Clicking of Animal's Teeth Frighten Simians Until in Their Excitement They Fall From the Trees.

How the leopards of the low country jungle of Ceylon capture monkeys is told by L. S. Woolf in a letter to the London Times.

"Native Singhalese, who knew the jungle well," he writes, "always assured me that no form of food, except perhaps the dog, is so acceptable to the leopard as the large gray Wanderer monkey. I have several times found the remains of monkeys that had obviously furnished the leopard's meal in the caves which serve the leopards for a lair—and the inside of a dead leopard has shown further proof.

"The Singhalese had often told me that leopards do not attempt to climb trees in search of their prey.

"Whenever monkeys see a leopard slinking under the trees they become excited and all chatter. As soon as the leopard hears this he lies down under a bush and begins to click his teeth.

"This noise seems to fill the monkey with terror and excitement. They huddle together in the tree top above the leopard's head, jumping up and down on the branches, shrieking and chattering. Below the leopard waits motionless, clicking its teeth, until suddenly one of the monkeys misses its footing and comes to the ground with a thud—and then the leopard is on it in a bound.

"I had always received this information with some doubt until I one day saw, at any rate, the first acts of the tragedy. I was traveling in thick jungle and my bullock carts having gone on in the early afternoon, I was following later in the evening down the same sandy track. I noticed that a large leopard had been following behind the bullocks and that he had suddenly turned aside down a small game track.

"At the same moment I became aware of a tremendous chattering of monkeys in the distance. I had a Singhalese with me and we crept through the thick jungle toward the noise.

"After crawling about 150 yards I saw about fifteen to twenty monkeys jumping up and down excitedly on the top of a small tree. They seemed to be looking down at something on the other side of a large bush which was in front of me and when they saw us they kept on turning their heads first at us and then to something else, leaping up and down and shrieking perpetually and—as it appeared to me—gesticulating and beckoning to us with their long, thin gray arms.

"The same thought came to the Singhalese, for he whispered to me: 'They are beckoning you to shoot.' I lay still for a moment thinking which side of the bush it was best to crawl around, and then I distinctly heard the click, click, click of the leopard's teeth behind it. I chose the wrong side, for as I came around all I saw was the leopard disappear in a great curving bound into the thick jungle beyond."

The Creative Impulse. The creative impulse does not itself know the next step it will take, or the next form that will arise, any more than the creative artist determines beforehand all the thoughts and forms his inventive genius will bring forth, writes John Burroughs in the Atlantic. He has the impulse or the inspiration to do a certain thing, to let himself go in a certain direction, but just the precise form his creation will take is unknown to him as to you and me. Some stubbornness or obduracy in his material, or some accident of time or place, may make it quite different from what he had hoped or vaguely planned. He does not know what thought or incident or character he is looking for till he has found it, till he has risen above his mental horizon. So far as he is inspired, so far as he is spontaneous, just so far is the world with which he deals plastic and fluid and indeterminate and ready to take any form his medium of expression—words, colors, tones—affords him. He may surprise himself, excel himself; he has surrendered himself to a power beyond the control of his will or knowledge.

Where "Stogie" Came From. "Ever know how the word 'stogies' came into use?" asked Robert Simpson, a newspaper man of Pittsburgh, to a little party of his colleagues at the New Willard. No one in the group of writers did, whereupon Mr. Simpson proceeded: "I presume there are more stogies smoked in the middle west than any other form of tobacco. In fact, stogies are becoming popular the world over, and there are many who like them better than the best cigar. A long time ago I was in a Pennsylvania lumber district, and the timber was transported to market by means of teams. The teamsters in most instances had a long haul, and ordinarily would take a whole day to reach their destination, which was Conestoga. Instead of taking along a pipe, the teamsters would lay in a supply of Pennsylvania tobacco, and as they drove along, with one hand would roll it into shape for smoking. These rolls came to be known as Conestogas, and as time went on the word was contracted to 'stogies.'"

Love Your Work. Do not look on your work as a dull duty. If you choose you can make it interesting. Throw your heart into it, master its meaning, trace out the causes and previous history, consider it in all its bearings, think how many even the humblest labor may benefit, and there is scarcely one of our duties which we may not look to with enthusiasm. You will get to love your work, and if you do it with delight you will do it with ease. Even if at first you find this impossible, if for a time it seems mere drudgery, this may be just what you require; it may be good like mountain air to brace up your character.

Preparing for His Finish. "I understand that young Bobbles has been going a fast pace about town."

"Yes, I'm afraid his father doesn't intend to put up with him much longer."

"Has the old gentleman threatened to cast him off?"

"No, but he recently gave the boy a 90-horsepower automobile."

Colored Owner of Restaurant, However, Was Taking No Chances That Particular Eyening.

Irwin Cobb, the humorist, was in Chicago recently and left this story behind.

"Down in Paducah, two darkies ran rival restaurants on the same street. Into one of these places one evening came a six-foot white man, who ordered and ate with gusto a dozen oysters, three lamb chops, a fried chicken, some sweet potatoes and an order of celery. When he had finished, he drew from his pocket a large clasp knife, opened it and began toying with the blade.

"What kind of a place is that restaurant up the street?" he asked.

"Tain't much of a place," said the proprietor.

"I didn't think it was. I had a meal in there last night, just about like this one, and what do you suppose that fellow had the nerve to charge me?"

"I dunno, sah," replied the negro, timorously eyeing the knife.

"He charged me a quarter. And I took out my knife and cut off his ears and fittin' them in his face. Then I knocked him down and walked over his stomach. Oh, by the way, how much do I owe you?"

"About a dime, sah," said the darkie humbly. "Not more'n a dime."

Busy Days. "Where's the president of this railroad?" asked the man who called at the general office.

"He's down in Washington, attendin' th' session o' some kind o' an investigatin' committee," replied the office boy.

"Where is the general manager?"

"He's appearin' before th' interstate commerce commission."

"Well, where's the general superintendent?"

"He's at th' meetin' of th' legislature, fightin' some bum new law."

"Where is the head of the legal department?"

"He's in court, tryin' a suit."

"Then where is the general passenger agent?"

"He's explainin' to th' commercial travelers why he can't reduce th' fare."

"Where is the general freight agent?"

"He's gone out in th' country t' attend a meeting o' th' grange an' tell th' farmers why we ain't got no freight cars."

"Who's running the blame railroad, anyway?"

"The newspapers and th' legislature."

Activities of Women. Miss Helen Taft, daughter of former President Taft, has gone back to Bryn Mawr college to take a special course.

The first flag to fly through the Panama canal will be that of the Daughters of the American Revolution.

Premier McBride of British Columbia has refused the request of the suffragists that they be given the franchise.

Mrs. Clara Larrison has been elected mayor of Troutville, Ore., by five votes over the man who opposed her.

In the United States there are three times as many native-born women as all the foreign-born men and women put together.

Women taxpayers of Montana have had the right to vote on questions submitted to taxpayers since 1887.

Lady Beauchamp, as the wife of the first commissioner of works in England, spends \$40,000 annually in entertaining.

Mrs. Charles Gale of Eureka, Cal., has been appointed on the board of trustees of the new State Normal school.

Wiser Than They Seemed. Boys, like things, are not always what they seem. A school inspector having been told that a certain class was very dull, decided to test them himself. Asking the lads to give him a number, and one of them calling out "Seventy-two," he wrote on the blackboard "27." No remark coming from the class, he asked for another number and was given "forty-eight." This he wrote on the board "84," and turned to observe any signs of intelligence. None were apparent.

"Certainly a very dull lot," he thought, and once more asked one of them to give him a number.

Then came a raucous young voice: "Thirty-three. Nah let's gee if yer can muck abaat with that!"—London Chronicle.

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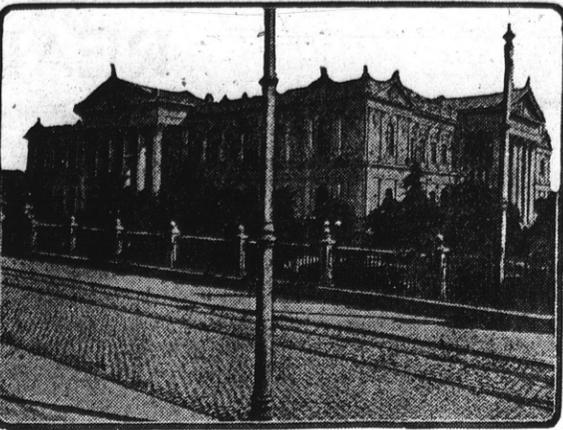
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AMERICAN INFLUENCE IN CHILI



CAPITOL AT SANTIAGO

THE bride-elect is the preface to some concluding observations on the canal. She was petite, pretty and plucky. Her trip also had some significance in relation to American industrial enterprises in the west coast countries. She came all the way from New York alone. When she left the steamer at Valparaiso she was not alone, and a hundred kindly eyes followed the pair. A few hours later I saw them in the American consulate. The civil ceremony had been concluded in accordance with the Chilean laws, and the religious ceremony had followed. Normally three months' residence is required in Valparaiso for foreigners bent upon matrimony, but when some official representative of their government is ready to vouch for their citizenship the Chilean officials are considerate and the formal requirements are waived. So it happened that in this case, with the aid of the consul, a few hours after the arrival of the bride-to-be she was able to leave for the mines with her American husband, writes C. M. Pepper in the New York Tribune.

With nearly every steamer that comes in from Panama a similar procedure is enacted. The American mining investments brought down a good many young Americans. Some had wives to fetch along. Others left sweethearts behind them, and the sweethearts now seem to be following in a regular procession. They are the visible evidences of the part that American capital is taking in giving fresh life to Chile's mineral industries. Everybody now assumes that in the future the number of Americans coming to Chile will grow larger.

Canal Prophecies. The matter of the Valparaiso harbor improvements is another aspect of the American influence in Chile. This country originally did not look with favor on the construction of the canal by the United States. There was a political phase of the matter which need not now be revamped. There was also the economic phase, which was more serious.

Chile, or a good many Chileans, really believed that the canal would have an adverse effect on the commerce of the country and would seriously divert trade. Punta Arenas, the metropolis of the Strait of Magellan, was then a free port, and benefited by its position at the uttermost end of the continent. It served the vessels from Europe and the United States which came up to this coast, as well as those on the route to Australia and New Zealand and other parts of the world. The assumption was that all this shipping would cease.

Reflection changed this pessimistic opinion somewhat, especially when it was realized that after the canal was opened many of the steamship companies would send their ships through the canal and back by way of the strait, or vice versa. Yet there is expected to be some loss of the Australian traffic, and while Punta Arenas will not diminish in commercial importance, it can hardly expect to grow. This possibly is the reason why the Chilean government a year or two ago took away its privilege as a free port and established a custom house in the strait. This southern toe of Chile is very far from being in a position to affect the whole country when it loses a little of its circulation.

Valparaiso Harbor. The commerce of Chile centers at Valparaiso. After it became certain that the canal would be built, the Chilean men of trade and some of the men of affairs began to study the question, and decided that Valparaiso was not outside the radius of the canal. If it had been, there would have been additional reasons for providing it with better shipping facilities, in order to hold its commerce against the canal competition. But the saner view was taken—the shipping facilities should be strengthened, both to get the fullest benefit of the canal and in order to offset such incidental loss in the world's commerce as might occur through the tendency of shipping always to seek good harbors.

After the earthquake of 1906 Valparaiso began to rebuild itself in a manner befitting its commanding position. The reconstruction is still going on, so that in some parts a modern city has been created. This was an-

other reason why the port facilities should be modernized.

Valparaiso as a city is more than one hundred years old, but as a harbor it did not show anything like a century of improvements. The natural conditions are all bad. The number of lives that have been lost, the ships that have gone down and the valuable cargoes that have been sacrificed in the terrific storms that are sometimes encountered, would make a formidable total, but the figures do not need to be added up now.

As to the preparedness of the United States to take advantage of the canal facilities on the west coast, after traversing it all the way down, my judgment is that there is no lack of adequate preparation. Possibly some results of overbooming still exist, and there are manufacturers and exporters in the United States who think that the 12,000,000 people who inhabit the west coast countries are going to double or treble their trade in a year, just because the canal is opened. But these golden visions are vanishing as the situation is studied in the light of actual conditions. The whole proposition is an economic one, and studied from the economic point of view there is the basis for a normal and healthy growth of trade, but not a phenomenal one.

AS BOY SAW GREAT WRITER

Brilliant English Author Likened by Observant American to Our Own Horace Greeley.

In his new book, "In Thackeray's London," F. Hopkinson Smith says: "The first and only time I saw him (Thackeray) was in Baltimore when I was seventeen years old."

"He and Mr. John P. Kennedy, a friend of my father, strolled one Saturday afternoon into the Mercantile library, where we boys were reading. 'Look!' came from a tangle of legs and arms bunched up in an adjoining easy chair, 'that's the Mr. Thackeray who is lecturing here.'"

"My glance followed a directing finger and rested on a tall, rather ungraceful figure topped by a massive head framed about by a fringe of whitish hair, short, fuzzy whiskers, crumpled collar and black stock. Out of a pink face peered two sharp inquiring eyes, these framed again by the dark rims of a pair of heavy spectacles which, from my point of sight, became two distinct dots in the round of the same pink face. The portrait of Horace Greeley widely published during his presidential campaign—the one all throat whiskers and spectacles—has always recalled to my mind this flesh glimpse of the great author whom I afterward learned to revere."

Primrose League. The "Primrose League" was formed in 1884, in memory of the late Lord Beaconsfield, whose favorite flower the primrose is thought to have been. Beaconsfield died on April 19, 1881, and the anniversary of that day is termed "primrose day," when the flower is generally worn by his admirers and also placed upon his statue in Parliament square. The joke of it is, the primrose was not the great statesman's favorite flower. It was, however, the favorite flower of Queen Victoria, and when asked about the floral tribute to be sent to Beaconsfield's funeral she advised sending "the primrose, my favorite flower." In some way the matter got mixed up, and the delusion sprang up that materialized in the "Primrose League."

Mrs. Twaddles Wonders. "I have always wondered," philosophized Mrs. Twaddles, "how a horse feels. Now don't interrupt with some silly remark; I am in earnest. A horse hasn't any idea what is going to happen to him when he is hitched up. He doesn't know how far he is going, or what he is going for. To be driven hither and thither, blindly, seemingly without purpose, with no idea what it's all about or when it will be over—how must the poor creature feel—what must he think about it all?"

"I suppose," answered Mrs. Twaddles, wearily, "that he must feel just as I do when you take me on a shopping trip with you."

But Mrs. Twaddles merely smiled.