

TILLING THE SOIL IN AFRICA

Agricultural Operations Are Carried on Extensively in All Parts of Country.

Extensive agricultural operations are carried on in all parts of Africa. "In the Zambesi valley," Livingstone said, "it was no uncommon sight to see men, women and children hard at work in the field, with the baby lying close by beneath a shady bush." He found the people in this section raising large crops of sorghum, millet, beans and ground nuts. They also had patches of yams, rice, pumpkins, cucumbers, cassava, sweet potatoes, tobacco and hemp. Maize was grown the year round. Cotton was generally cultivated. Three varieties were observed, two foreign and one native. Every family of any importance had a cotton patch carefully cultivated. Bishop Mackenzie came into this section of the continent as a fellow missionary of Livingstone. When the good bishop beheld how well the fields of the Manganja were cultivated, he remarked, "When telling people in England what were my objects in going out to Africa I stated, among other things, that I meant to teach these people agriculture; but I now see that they know far more about it than I do." Early travelers in South Africa were amazed at the wonderful proofs of industry and the extent of the cultivated land surrounding the great towns of the Bechuannas. In 1813 a Mr. Campbell paid a visit to Lithako, the great place of the Balatpin. As he approached the town he passed through extensive corn fields spreading on both sides of the road. His Hottentot companions were amazed at the extent of land under cultivation.—Monroe N. Work in the Southern Workman.

How Victor Hugo Wrote an "Ad." It may not be generally known that Victor Hugo used to draft the advertisements of his own books instead of leaving the task to his publishers. His correspondence with his Belgian publishers gives the following example of the great novelist's advertising style: "After the middle ages, the present time: Such is the subject of Victor Hugo's double story. What he did for Gothic art in 'Notre Dame de Paris' that he has done for the modern world in 'Les Miserables.' The two books figure in his scheme of work as two mirrors reflecting the whole human life."

An encouraging example to those young authors who cannot make up their minds how much modesty is enjoined by the best literary traditions!

Got Wrong Impression. They were man and wife, says the Cleveland Leader. They were also trying to catch an East Cleveland car as it rounded the turn in front of the Williamson building. She was the first to see what she took to be their car and started in hot pursuit. But her husband saw that 'twas a Shaker Lakes car, and began to yell lustily: "Shaker Lakes!" the woman seemed to run faster than ever instead of slowing down. "Didn't you hear me tellin' you that was a Shaker Lakes car?" he inquired, breathlessly, and a bit grouchy. She looked at him and gasped: "I thought," she said, "that you were trying to get me to hurry. It sounded as if you said: 'Shake your legs!'"

Faint Praise. Allan A. Ryan, the well-known expert on flying, condemned, in a recent interview in New York, the new type of monoplane—the dangerously frail monoplane to which is harnessed a Gnome motor of enormous power. "These machines," said Mr. Ryan, "are killing off so many young men that, really, if you wanted to praise them, you'd have to balance your words as cautiously as the man with the two-cent cigar. "This cigar," the man said, regarding it closely, "has one very good point and one very bad one. The good point is that it contains no cabbage. The bad one is that it contains no tobacco."

In a Sick Room. Don't whisper. Don't wear squeaky shoes. Don't wear starched clothing, or stiff silks. If the nurse cannot wear rubber soles, an old pair of shoes will at least make less noise than a new pair. Dishes containing broth or medicine brought into a sick room much be arranged so that they will not rattle. The only exception to this is the clinking of ice in pitcher or glass, which is nearly always pleasant to the ear of the sick person. But a spoon hitting against a plate, a saucer rattling in another dish, are harrowing to the ears of the invalid.

When Not in Use. Mrs. Yeast—And so you use this rolling pin every day? Mrs. Crimsoonek—Oh, no; not every day. You see, some days I don't cook, and some days my husband behaves quite decently.

Why They Didn't Sell. Christopher—Did Loomis sell any of his patent mustard plasters? Randall—No; they were so hot that every druggist refused to carry them; they increased the fire risk 50 per cent.

GIVE THE SHOP-GIRL HER DUES

IN an excellent short story published not long ago, O. Henry gave to his shop-girl heroine a colossal character, emphasized that in her were combined the notable attributes of Hercules, Joan of Arc, Una, Job and Little Red Riding Hood. And at this season of the year—"glad Christmas days"—it easily might seem to a less sympathetic person than the regretted O. Henry that the shop-girl most stands in need of the strength of Hercules, the heroism of Joan of Arc, the truthfulness and other singular excellencies of Una, the patience of Job. Think what it must mean, from eight to six, or eight to ten, as the case may be, to face and serve the rattled throngs that are now surging through the shops, think of the strain on endurance and nerve, on temper and manners. The wonder is not that she often comes up to the demands on her, but that she ever does.

Some of the veterans, survivors of many hard-fought Christmas battlefields, are marvels; may be seen at fag-end of day still alert, though droopingly so; still clear-headed, though with conscious effort; still with courteous attitude in their serving, though those they serve have lost the last shred of any politeness with which they may have started out. Compare the manners of some spoiled darling, some indulged, arrogant child of wealth, with the dignity and patience and sweetness often shown by the girl behind the counter. The one self-centered, of most restricted vision, captious, petty; the other self-effacing, far-seeing, charitable, big. Caleb in search of a wife might well pursue his quest along the aisles of the big stores, find womanly ideal standing there behind the counter. They are not all caricatures of fashion, with hair tortured into latest exaggeration, frocks cheap copies of showy splendors; not all more given to powder and rouge than to soap and water. And in the attainment of the so highly-desirable neatness and trimness heroism again has to come to the fore, it is no easy matter after long hours of labor to labor more, take pains for personal cleanliness, sew and darn when eyes are heavy, back is aching. Heroines every one of them that make a good show.

I know a girl in a fashionable candy shop that every other night washes and irons that she may be presentable the next day. Her moderate wage is the chief part of the family support, there is not enough money for enough blouses to last the week, and so the midnight laundrying is done as a matter of course. But how pretty and sweet and fresh the girl does manage to look in her snowy white and well brushed black; much better dressed, she seems to me, than the woman of furs and feathers. What little mothers they are, a lot of them, simple affectionate, domestic creatures—though so often characterized as vain, shallow, foolishly ambitious, thinking only of dress and "dates." I know one girl that worked in one of the department stores which keep open evenings at Christmas time, who the night before Christmas did not leave the store until midnight, then after travelling an hour on the street cars to her home stayed up hours to trim a wonderful Christmas tree for the children of the family, the bunch of little ones the poor seem always to have with them. I know another girl that at this season goes down unusually early mornings to arrange "stock" comes home unusually late evenings; but after dinner cheerfully dons kitchen apron and helps with giant plum pudding and other Christmas preparation that yearly is repeated in honor of old England and the home left behind when there was made search for fortune in the rich land of America. These are just two instances, the one quite commonplace, unheroic, but you may pick up a few for yourself by eavesdropping a bit in your shopping; observing among the buyers the many shop-girls purchasing toys and silver "pusher," children's

Sew and Darn When Eyes Are Heavy. all I would ask of good Saint Nicholas would be a dark, airy room far, far away from people (from man, and especially woman); a great, soft bed where I could stretch out long and wide; silence and sleep forever and forever. No dreams to disturb that sleep; no vision of past hangings, no vision of wearisome "exchanges" to come. But the reality is a long way from this that I would ask. Do you suppose such a proud wage earner as she would be content to let Christmas day go by without displaying wealth and power? No, every dependent in the household must partake of her bounty, every pensioner be given good proof of what it means to have her dress up and go down town every day. Nothing of niggard is the shop-girl at Christmas, she is as much a Lady Bountiful as any millionairess of them all.

THE IDEAL WORKSHOP.



And the jolliest and best old workman in the world.

Christmas Day

To rule and reign with gentle sway. The King of Love was born today. No palace walls enclosed him round. But in a manger was he found. That so the boastful world might see The greatness of humility. He came, a child, in lovely grace. That so a child might seek his face. So poor was he, the humblest born. Might come, without a fear of scorn. To all mankind he showed the way. And ushered in the dawn of day. And so, with grateful love and praise, We hail this blessed day of days. The children's joy, the poor man's feast, The star of hope to great and least. When holy angels come to earth, And sing anew a Savior's birth!

gloves and sweater, or gray dress for mammy, muffler for daddy. Of course there is any number of pert, incompetent girls that wait on hapless customers, rather keep hapless customers waiting, but they have been pictured with enough frequency, this sort repeatedly held up as typical, thereby obscuring the virtues of the many worthy ones following the profession of "waiting on." For some time past I have been gathering data, making experiment; and have found it the rule rather than exception that courtesy meets with courtesy. "Soft and fair go far in a day," not only on highway but in the miles of space in a huge department store. A man said to me recently: "How little of church is brought into the Christmas of today." And how sadly true this is—"church" in this connection standing for whatsoever things are lovely, whatsoever things are good, of full import to all religions. And bullying and bullying a shop-girl at this season seems about as far from "lovely and good" as one may wander. Put yourself in her place, remembering previous failures of your own when bodily weariness snapped strained nerves, broke down poise. Ye gods and little fishes, in what condition is the shop-girl to "enjoy" Christmas! I am sure if I were she



What a creature! A "Hercules," a Joan of Arc, a Una, a Job" and a Lady Bountiful on eight dollars and less a week! (Copyright 1910.) Agnes' Prayer. Our little five-year-old Agnes, having been reprimanded by her mamma for some slight misdeed, went and knelt by a chair and prayed as follows: "Oh, Lord, make me a good little girl. I want to be a good little girl, but I don't know how. But, if I am naughty, please send Santa Claus just the same."

Christmas Time.

I have often thought of Christmas time, when it has come round, apart from the veneration due to its sacred name and origin, if anything belonging to it can be apart from that—as a good time, a kind, forgiving, charitable, pleasant time.—Charles Dickens.

NEW ERA IN FINANCE

ACCURACY AND PUBLICITY PROVES TO BE A POPULAR MOTTO.

Prompt Response to Bold Move of President Vall.—"Accuracy" Reduced Western Union's Surplus \$13,000,000.—"Publicity" Restored Confidence and Its Stock Went Up.

Are the great financiers of the country beginning to see a new light? Time was, until recently in fact, when the men at the head of the big corporations "kept their business to themselves," as far as the law would allow. Capable men at the head of the big concerns, long realized the weakness of their position, but what was needed obviously, as in all great reforms, was an unmistakable occasion and a courageous man. The occasion arose in the purchase of the Western Union Telegraph company by the American Telephone and Telegraph company, and the man appeared in Theodore N. Vall, President of the Purchasing corporation.

It was last December when public announcement was made that the Gould holdings of Western Union had been taken over by the Telephone company. On account of the high esteem in which the management of the telephone company is so generally held, great things were predicted as a result of the absorption of Western Union. By the press of the country the "deal" was most favorably commented on, it being widely pointed out that under the direction of such men as Theodore N. Vall and his associates, the telegraph company was bound soon to work itself into a position where it could offer the public far more efficient service than it had ever before been able to offer.

But a very few months had elapsed when it became apparent to the new management that a modern and up-to-date appraisal of the company's assets would make possible a far greater degree of efficiency of operation. "Here," they said to themselves, "we've bought control of this property and we know it's immensely valuable, but we don't know just how valuable. These appraisals of real estate and securities owned were made a long time ago. If we have a complete inventory made of every thing we've got we can announce the facts to the public, start a new set of books, and begin our responsibility to stockholders right there."

How Inventory Was Taken. The most expert accountants and appraisers to be had were put at the task. Their labors lasted over eight months. Their report and its publication by the company marks an epoch in finance.

It began by recommending an adjustment of the difference between the appraised and book values by a charge of \$5,595,089 against surplus. Book values of securities held were reduced to market values, bad and doubtful accounts were "charged off," an allowance of \$2,000,000 was made for "depreciation," another of \$500,000 for "reserve," and so on, until the old surplus of \$18,867,000 came down to \$5,136,000.

It required courage, the publication of this statement to stockholders, saying in effect: "The property of your company has been revealed; the surplus isn't nineteen millions, as you have been led to believe, but five millions," but it was the truth, and President Vall did not flinch. "Accuracy and publicity," he declared, was essential. "The stockholder has a right to know. The shares of this company are scattered from one end of the Union to the other. This is more than a private corporation. It is a great national enterprise. The public is entitled to the facts."

The report was ordered published forthwith. Financiers of the old school and speculators generally were aghast. What would happen? Would the bottom drop out of Western Union when the shareholders realized that their property was worth \$13,000,000 less than they had supposed? But the amazing thing happened. The stock went up and stayed up. The public had responded to this remarkable display of frankness and confidence; to the new motto, "Accuracy and Publicity."

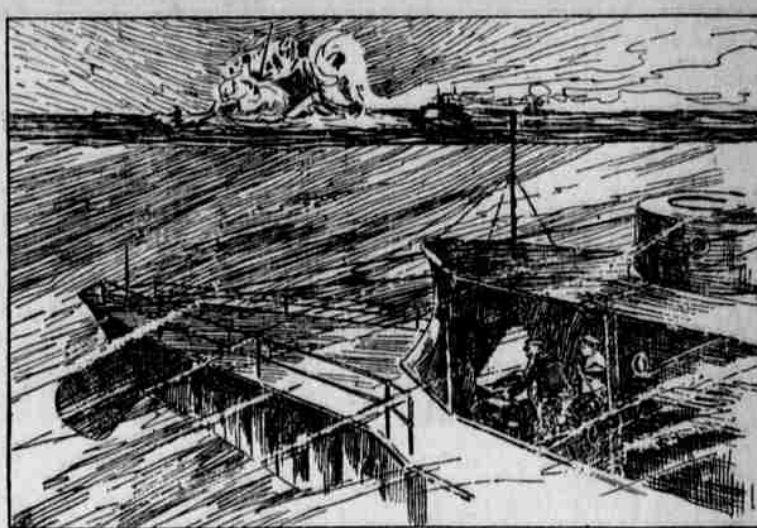
The full significance of the action of the new board is stated concisely by Harper's Weekly in these words: "Is this policy of publicity and of open-handed dealing with shareholders and public the forerunner of a similar movement on the part of other big corporations? Certainly it is to be hoped that it is. In the case of these big companies, dependent upon public patronage and doing business under public franchise, can there be any question of the right of the people to know?"

"That right is being recognized. It is recognized now in this epochal act on the part of the telephone and telegraph interests. It is the dawn of a new era in corporation finance."

Timeliness.

All measures of reformation are effective in exact proportion to their timeliness; partial decay may be cut away and cleansed; incipient error corrected; but there is a point at which corruption can no more be stayed, nor wandering recalled. It has been the manner of modern philanthropy to remain passive until the precise period, and to leave the sinner to perish, and the foolish to stray while it spent itself in frantic exertions to raise the dead, and reform the dust.—Ruskin.

DANGER IN THE SUBMARINE



THE DESTRUCTIVE SUBMARINE

EVER since submarines were first introduced brainy men have been at work devising methods by which dangers to their crews can be reduced to a minimum. Those who are used to serving in these deadly little craft will tell you that these dangers are not so great as is usually imagined, and that the loss of life from accidents has really been comparatively small.

The two great dangers are collision and explosion, and special attention has been given to methods that will prevent loss of life in case of accident from these two sources.

When the submarine is submerged it is really half blind, for the periscope is only a makeshift eye, but even this has been greatly improved. Formerly the lens in use only allowed half the horizon to be examined, unless the periscope was turned round. It could therefore happen that a ship might come up unnoticed and strike the submarine before it could dive to safety. Now, however, a new lens has been devised which gives a complete view all round, so that an approaching vessel can be seen from whatever quarter it comes. The periscope is the eye of the submarine. Its vertical telescopic tube looks like a very thin smokestack, extending 15 feet above the submarine's bridge and its top part contains the so-called eye, which sends down images of the outer world to the interior of the submarine, either by reflection or refraction. One system is almost as good as the other. The reflection apparatus has two mirrors at 45 degrees at the two extremities. The apparatus by refraction has two prisms of total reflection, as in a camera. Behind the top one a mirror sends down the image that can be enlarged—like the telescope attachment to a camera—but both systems have the disadvantage of looking on the world through a pinhole.

Suppose the "eye" be fixed north. Those in the submarine get a glimpse due north. To glance a few degrees on either side the whole tube must be turned or else the eye alone. In the first case—if the tube does not twist or grip—the image turns with it and observers have to move around the table. If the eye alone be turned the lower prism or mirror remains fixed. The image, consequently, shows all objects inclined at the angle of the eye's turning.

For years past the French admiralty has never ceased to hunt for something better. The navigation of submarines under water absolutely demanded an apparatus capable of disclosing simultaneously the whole circle of the horizon—plus a telescope magnifier for the object to be carefully examined.

And here we are on the delicate ground of a state secret. They have found their apparatus. It is known, too, that they got upon its track by seeking to utilize an annular prism devised by Colonel Manjlin for the taking of circular photographs of the horizon from a captive balloon. This is all we really know of the construction of the machine that is to put French submarines on a footing of such enormous superiority that the mind does not at first grasp the meaning of it. But the effects produced by the machine have not been kept so secret.

In Brest three submarines and three submergibles were fitted with the apparatus at once for experiment and extraordinary tales are told of exploits under water. Up to within a mile of its prey the submergible floats on the surface like a simple torpedo boat. Then, fearing to be seen, it sinks and continues navigating six feet under water with the aid of the admiralty's perfected periscope. Within 800 yards of the doomed ship they pull in the telescopic tube and navigate a short time by the compass.

When they judge they are within 500 yards they push the tube into the air again—just high enough to let them see their prey. It is practically invisible to people unsuspecting of its presence in that particular spot. At 300 yards the torpedo is shot and what happens is what happened to the Russian fleet—so often.

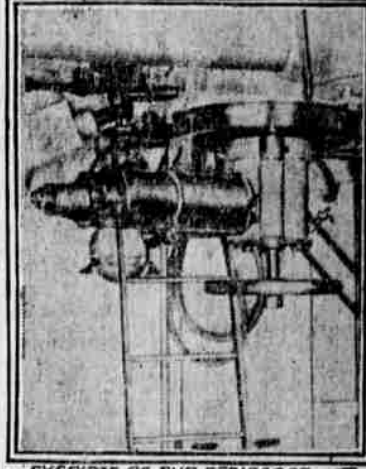
These are submergibles, 112 to 220 feet long, semisubmerged and furnished with both steam and electric engines. Their normal plane of travel being on the surface just like a torpedo boat, their primary motive power is the steam. These steam engines run the dynamo to renew the motive power of the electric engines and all

details of their construction are kept a dead secret.

Serious danger is escaping petrol, which may lead to an explosion. By the regulations the engine must be stopped as soon as an escape is noticed, a bad accident being caused a year ago by neglect of this precaution. Two engineers employed at Portsmouth have invented an apparatus that registers the escape of petrol or other gas, coming into action long before sufficient can have escaped to form an explosive mixture. By an ingenious contrivance a red light is substituted for a white one and a bell is rung when there is a leakage of gas.

Sometimes sea water will penetrate into the accumulators, a very serious danger, as chlorine is thereby evolved which may suffocate the crew. A safety helmet, somewhat resembling those worn in mining explosions, has been designed by a couple of naval officers. Attached to a water-tight canvas jacket that straps round the waist is a big helmet with a glass front, not unlike that of the ordinary diver.

Just below the front of this is a magazine containing a special substance called "oxylithe," which has the power of giving off oxygen and absorbing the carbonic acid in the air when it comes in contact with water. In this manner the wearer of the helmet has always a good supply of air to breathe, so that in case of the evolution of chloride the crew would



EYEPIECE OF THE PERISCOPE

hastily don these jackets, which are kept in all submarines.

They have still another use, for, being full of air, they serve as life-buoys. Thus, in the event of a submarine being struck by a passing ship and holed, these dresses would be put on at once. Then the hatch could be opened, and the men would float to the surface.

Air always seeks the highest point, and as soon as a submarine leaks the water fills the bottom and pushes the air to the top, where a certain quantity is always held in any odd little corner near the roof. Therefore, thin steel partitions, depending a foot or two from the roof in places where it slopes or forms corners, are being fitted in order to form air traps in different parts of the interior.

Thus, when a bad leak occurs, filling the submarine with water, the air is pressed into these traps. The crew immediately seize their helmets and stand with heads and shoulders above the water in the air traps, so that they can breathe while putting on the safety dress.

Another invention that has been tried in one or two of the underwater craft consists of a long flexible tube attached to the outside. At one end is a float, while the other communicates with the interior. In the event of an accident this tube is liberated, and is at once borne to the surface by the float, to which is attached a flare, to give notice to any ship near at hand. Until the submarine is raised, the crew can breathe through this tube, or food might even be passed down.

At least one American vessel is fitted with a door through which the crew can escape if necessary. This door opens into a chamber, which in its turn communicates with an air lock. If it is desired to leave the submarine, a diving dress is donned and the air lock entered. The door communicating with the interior of the vessel is closed, and then the diver goes into the outer compartment, closing the door of the air lock after him. Water is then allowed to enter, and when it is full he merely opens the door and steps out. The door is then closed and the water pumped out again, so that others can follow.