Geophone Aid in Mine Disasters

Instrument Developed During World War Has Been Perfected by Engineers.

EXPERIMENTS PROVE VALUE

Detects Subterranean Sounds at Great Distance—Has Many Uses, but Its Advantage in Mine Rescue Work Most Important.

Washington.—As the result of experiments made by the bureau of mines, the geophone, a novel instrument used amid the reek and slaughter of the World war for the detection of earth and rock sounds, made in the construction of military mines and tunnels, promises to become an active factor in the saving of the lives of miners entombed as the result of fires and explosions.

In the course of tests conducted in the bureau's experimental coal mine near Pittsburgh, blows with a sledge on the coal face were heard, by means of the geophone, at a distance of 650 feet, with various rooms and entries intervening. On a suspended pipe line, light hammering with the knuckles was detected at a distance of 1,500 feet. Ordinary talking and singing could be detected through 150 feet of solid coal. By the use of two geophones, one instrument to each ear, it is possible to determine the direction from which a sound is coming, and thus to locate the approximate position of the entombed miner.

Another promising use of the geophone is in the location of leaks in water pipes. By means of the instrument, it is possible to hear water circulating in the pipes of ordinary city mains situated ten to fifteen feet below the surface. Tests conducted at a busy corner in the downtown district of Pittsburgh located a leak in a water main which the water company had sought to detect for two weeks vainly.

Sensitive, but Simple.

The mine geophone is sensitive, yet extremely simple and easily portable. The instrument was invented by the French during the war to detect sapping and underground mining operations. It was developed by the United States engineers, and the instruments now used by the bureau of mines were made according to plans drawn by them, except for the introduction of different diaphragms. The geophone is essentially a small seismograph, as it embodies the same principles as the ponderous apparatus that records earthquake tremors. It really consists of a lead weight suspended between two elastic diaphragms cutting across a small airtight box. If the instrument is placed on the ground and any one is pounding or digging in the vicinity, energy is transmitted as wave motion to the earth, and the earth waves shake the geophone case. The geophone, therefore, transforms the earth wave into an air wave, which is heard by the ear as sound, and at the same time magnifies the wave so that the sound is louder than if the ears were placed in direct contact with the earth.

The observations of the bureau of mines indicate that the geophone should be quite useful in the location of mine fires. Usually a mine fire makes enough noise, either by drawing air or by breaking off slate and coal, to be heard for a considerable distance through the coal, and even through the strata above. The distance that these sounds can be heard depends a great deal on the nature of the strata above the mine, yet the sounds originating at a mine fire should be detected through 100 to 300 feet of cover and through 500 to 800 feet of coal.

Aids Mine Engineering.

Geophones supply a quick and fairly accurate method of mine surveying. If two tunnels are being brought together from any direction, the progress of the tunnels could be observed by means of the geophones, and their relative positions determined.

Another application of the possibilities of the instrument in mine surveying is in the prevention of accidents in blasting through. If two tunnels are approaching each other, or are passing a short distance apart, it is necessary to determine the relative location in order that men may be warned to keep away from the point of danger. As the sounds transmitted through the geophone are so characteristic, frequent observation would enable a trained observer to follow the progress of the work in the opposite tunnel. He would thus be able to tell when blasts were to be fired.

No attempt has been made to adapt the geophone to determine the earth movements that sometimes occur in deep mines and are termed "bumps" by the miners. It is probable, however, that this instrument may be of use in certain parts of the anthracite coal fields, where cave-ins have destroyed mine working, causing loss of life, surface subsidence and injury and destruction of buildings.

The manifest advantage of the geophone for use in mine rescue work has led the bureau of mines to place the instrument on its mine-rescue cars, which are constantly being called to assist in the succor of entombed men at mine fires and explosions.

JACKASS IS HIS MASCOT

Maj. Claude Davenport, an American army officer stationed in Rumania, has adopted as a mascot a young jackass. He is here seen holding his pet, then five weeks old.

Sage's Influence Strong in China

Teachings of Confucius Still Remain the Moral Guide for People of Vast Domain.

ANCIENT TOMB IS NEGLECTED

Interest Directed to the Great Chinese Sage by Dispute Among Descendants Who Inherit Duty of Caring for Shrine.

Washington.—The tomb of Confucius, the mecca to which millions of Chinese pilgrims have journeyed, is said by dispatches to be covered with weeds due to a dispute between descendants of the great sage, who have inherited the duty of caring for this shrine of the nation.

The burial place of the man who has dominated Chinese thought for 25 centuries is described, as it appeared a few years ago, in the following communication from Charles K. Edmunds to the National Geographic society:

"This Confucian temple, an enormous and magnificent place, occupying with its grounds the whole of one side of the town of Kufu, is the model of the Confucian temples found in all the cities of China. It is almost certainly the growth of ages.

Contains Image of Sage.

"Within the main building, called 'The Hall of Perfection,' sits the canopied image of the great sage, of which there are not more than two or three duplicates throughout the empire. Ordinarily, Confucian temples do not contain an image of the sage, but a simple tablet before which veneration and devotions are expressed.

"The statue is of wood, larger than life size, and represents the sage seated, holding in his hands the imperial tablet, or scepter, as a symbol of his sovereignty in the realm of thought.

"He is clothed in nine different silk garments, on which the 12 imperial emblems are embroidered, namely, sun, moon, stars, mountains, dragons, pheasants, altar vessels, water lilies, flames of fire, rice, axes and classic characters. While nine of these were used for great princes, as well as emperors, the first three were exclusively imperial insignia. Thus is denoted the high rank with which Confucius has long been honored.

"The temple grounds are separated from the rest of the town by the street that marks the site of the ancient village in which Confucius was born, the actual site of the house itself being marked by the Duke's palace, for there is still a duke in Lu, the seventy-seventh lineal descendant of the sage.

"Besides the contributions from devotees and appropriations from Peking, estates of many acres are devoted to the support of the temple and the supply of the great number of pigs, sheep and cattle required for the sacrifice, for no symbolism of cheap paper images as substitutes for the real article, so common elsewhere in China, is allowed here.

"The duke is also in charge of the upkeep of the great Confucian cemetery, which lies outside the city, to reach which one goes from the north gate of the city for about a mile along a wide avenue lined with cypress trees.

Tens of Thousands of Graves.

"The portal to Sheng-ling, built in its present form in 1755 by the seventy-first lineal descendant of Confucius, gives access to a park-like enclosure of over 500 acres, containing the sepulcher of the sage and of all his descendants. The total is undoubtedly several tens of thousands of graves. When a family holds together for 2,500 years, it grows into a big concern—about 70 per cent of the population in these parts, even the soldiers sent as escorts claiming membership in the clan. The park is cared for by 200 attendants, whose families have inherited this duty for many hundreds of years.

"From the outer entrance of the 'Grove of the True Sage' an avenue of fine and ancient cypresses, about 150 on a side, leads to an inner inclosure, where are halls for worship and monuments of imperial visits from the Sung dynasty down.

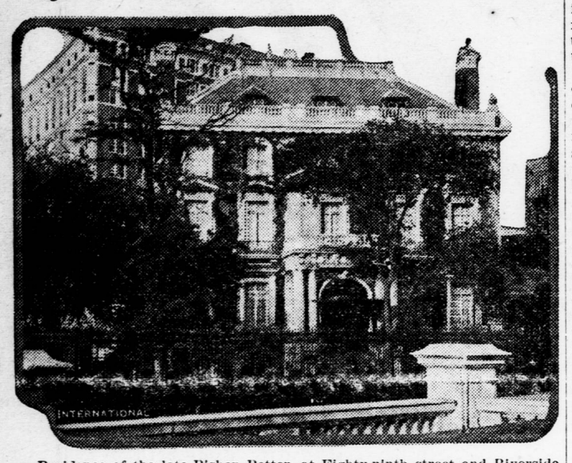
"As one passes inward the monuments become more and more ancient. The aspects of the park are rather those of age than of neglect. Presently one comes to 'The Holy Way,' closed in by walls like "The Emperor's Way' from one palace building to another, thus denoting the imperial ranking of the sage.

"Finally, in very nearly the center of the whole inclosure, the visitor comes to two hillocks that cover the remains of Confucius and his son. In front of each is a simple stone altar and an inscribed pillar, the one before that of the sage himself reading 'Most Holy Ancient Teacher.'

"It is said that the earth forming the mound covering the body of Confucius has been brought from each of the 18 provinces of the empire. However that may be, it is certainly true that the influence of the sage has been and still is felt throughout the whole extent of the great country; and the prophet himself, while in these latter radical days somewhat dusty, still bears on his shoulders the vast commonwealth of China, whose moral basis, with all its deficiencies, is surely a great memorial to a great and wonderful man."

The management of the Daughters of Israel Home for the Aged, in Newark, N. J., has yielded to the desire of the oldest inmate, one hundred and ten years of age, to have her hair bobbed "like the other girls."

May Be Official Home of Gotham's Mayor



Residence of the late Bishop Potter, at Eighty-ninth street and Riverside drive, New York, recently purchased for an unknown client, is believed to be the site chosen as the official residence for New York city's mayor. The building is of colonial design, and will, according to rumor, be presented to the city for use as the mayor's home.

Only Worth $3.20.

Poplar Bluff, Mo.—Mike Vasil of Cape Girardeau is a "millionaire." Vasil recently fell heir to 1,600,000 Russian rubles. When they were delivered to him in sixteen certificates of 100,000 each he found, by examining the rate of exchange at the present time, that the "fortune" was worth just $3.20. Before the war this amount would have been worth $800,000.

In 1548 the Jews of Portugal were banished to Brazil.

ALCOHOLIC DEATHS ON INCREASE

New York Medical Examiner Reports 89 Pct. Over 1920 and 27 Pct. Over 1921.

New York.—An increase of nearly 89 per cent in alcoholic deaths this year over those of 1920 and 27 per cent over 1921 has been reported by the chief medical examiner for New York. The report shows that eighty persons died of alcoholism in the first six months of this year. These include only victims who died without medical attention.

Dr. Charles Norris, medical examiner, said many others probably died of alcholism who were attended by private physicians.

The total number of alcholic deaths for 1921 totaled 127, or 33 less than the total will be for this year if the present rate is maintained.

MILLION FILIPINOS ARE IN SCHOOL

Average Cost of Instruction Is $11.50 Each Pupil Per Year, Says Bureau of Education.

Manila, P. I.—Approximately 1,000,000 children out of the estimated total number of children of school age of 1,796,000 were admitted to the public schools when the sessions opened this week, according to the bureau of education. This is nearly the same number as attended school last year, the policy of the bureau this year being simply to keep open new ones, owing to the necessity of economy. The average cost of instruction is approximately $11.50 a pupil per year.

Cow's Great Record.

York, Pa.—H. E. Robertson, east of York, has a two-year-old Holstein cow which has surpassed the record made by any other in the state of her class, and is now champion of Pennsylvania. She made 21,028.1 pounds of milk and 592.92 pounds of butter fat, equivalent to 741.1 pounds of butter. She displaces the record of Bellewood Pontiac Ormsby Ruth, owned by C. W. Bray of Bridgeport, whose record is 717.1 pounds of butter in the 365 days.

Roman custom dictated that a son of a dead man should conduct the funeral services.

To Concentrate on the Sleeves

We hear all sorts of rumors about the sleeves that are to come—whether they shall be tight or loose, flowing or plain—but always it is the sleeve, it seems, around which the clothes interest centers, observes a fashion writer in the New York Times. Collars, skirts, bodices and waistbands keep their own importance in the scheme of things, but sleeves remain, still, the center of attraction.

There is no known fabric, no known method of trimming, no clever adornment for feminine attractiveness that

Afternoon Frock of Silver Lace and an Underlying Area of Gray Georgette Tucked in Group for Trimming.

has not been applied to the scheme of sleeve construction and with the utmost success as a result. Each woman who at all prides herself upon her dressing as a mark of distinction for her personality pays much attention to the manner of the shaping of her sleeves. There is where the art of the modern gown is concentrated. By the swing and sweep of the sleeve is the style of the frock established. The sleeve, by all odds, carries off the bulk of attention. And so it shall be during the coming season—so the designers have decreed, if their advance models are to be taken as any criterion.

By their sleeves ye shall know them. That is the new style slogan. The rest of the gown may be so simple that it is absolutely devoid of interest. It may cleave to the common level in every other particular, but as for its sleeves, there it excels. Sleeves are the importance of any gown. They are the points by which you tell at once whether it is in the class of the ultra smart or not. They may be plain, indeed, but they somehow manage to place themselves as the center around which all interest revolves. That is their distinction in the modern plan of dress.

To Be in Height of Fashion.

So, see to your sleeves if you would be "in the swim" of fashion. Do not allow them to sink to the level of mediocrity. They are your banners of fashion. And no matter whether their folds sweep into the soup, they still must carry that gracefulness which is so essential a part of the frocks that are new. The sleeve has only just begun to evolve. It promises, during the coming season to establish a real style interest never before achieved in exactly the ratio that this sleeve era shall attain. So, what could be more of fashion interest than to study the sleeve as it exists today, with an eye to its evolution in the future?

In one model there is used a combination of white against black kasha cloth. Then to join the two together there are rows of handwork in embroidery done with black threads. But it is in the sleeves that the real design converges. They are simple enough to be sure, but they carry with them that certain style which marks them as an insistent part of the modern era.

The blouse of this particular dress is cut in the kimono fashion that is so dear to the heart of the French. But the sleeves slope away in a very informal manner and then they are tied together with a band of the white kasha cloth made to form a sort of a tassel. They are inconspicuous enough, but they have that certain air of being the points of interest that dignify the gown as a portion of the season's mode. Again at the neckline the band is used to tie the collar together, and these three ties serve to form a pattern that draws the whole design of the garment into one.

The hat is white, as one might expect, and it is faced with a layer of black, while the roll that forms the trimming about the crown is made of white velvet twisted until it forms a sort of rope.

Capelike Sleeves.

The sleeves of this gown are full enough to run into a sort of drooping effect at the back which, when the arms are loosely hung at the side, form a capelike look across the back in spite of the fact that they are veritable sleeves when the arms are posed at other angles.

This is one of the happy parts of the modern sleeve. Besides being a sleeve, it is usually something else. They, together, form a cape, a scarf, a collar or what not? They are, only to begin with, sleeves, but they usually have some other function to perform in the design of the gown considered as a whole. There are sleeves which reach into side draperies for the skirt. And this they do most effectively.

For instance, there is a dress of brocaded silk in gray. It is straight enough and plain enough by itself. But then there are the sleeves. They are folded and draped and flung over the arms and when the chiffon has finished making sleeves to be worshiped for their very beauty then it takes itself into the skirt where it is draped and folded to such an extent that it makes the real interest of that skirt. Of course the drapery congregates at the sides and at the hem it falls in points over the hemline. But the sleeves are the things which start the idea and from them the folds of the skirt take their way in unalloyed enjoyment. To finish the gown there is a wide band of silver lace to make the girdle and then there is a chou of violet flowers made of chiffon posed at one side to finish off the girdle. On the whole it is a notable gown, in perfect harmony with the style of the present mode, but after all, its sleeves are the central points of interest. From them the draperies that make the gown distinctive emerge, and in them are the lines that establish the continuity of the shaping of the gown itself.

For Afternoon Dresses.

For afternoon dresses the sleeves are of just as much importance as they are for any other sort of frock. In fact they are more so, if the truth were faced. Afternoon frocks must, of necessity, be graceful and, just now, without flowing sleeves there is no chance of achieving a graceful frock without that side addition that makes a sort of sleeve drapery.

There is another frock. It is composed of gray georgette, combined with wide applications of silver lace. And it is a gown that is notable so far as its sleeves are concerned. The sleeves and the upper section of the bodice make a pattern with the groups of tucks that are so arranged that they string along the sleeves and then across the neck. Other than that there are only layers of the silver lace which stretch over the foundation of the same chiffon. But who can say that the sleeves are not the interest of the design of the gown? The lace is the trimming. Oh, yes, to be sure. But the foundation frock is accentuated by the rows of tucks that stretch across the front and the back of the bodice and then down the sleeves and across

One of Lanvin's Latest Street Costumes. It Is a Combination of White Kasha Cloth With Draped Sleeves.

their edges to make a design of simplicity by which the whole tone of the frock is established.

On some of the newer summer dresses there are seen sleeves that are long and tightly fitted. They are mostly of lace or of some transparent material, and more often than not they have some trailing scarflike affair drooping from them. But there have been seen these sleeves, and on the very most advanced models, that are tightly fitted even to the wrists and then are allowed to flare over the hands in a most picturesque manner.

THE DEFT ART OF DRAPING VEIL

Countless Ways Used by Women In Arranging the Affair to Obtain Individuality.

There are countless ways of draping long veils. It never would be possible to put one's personality as much into the wearing of a hat or a dress as into the wearing of a veil—and every woman has a deft little way of her own in its arrangement wherein the greatest originality prevails.

In addition to veils of chiffon there are those of chantilly lace or of net in a fancy mesh quite elaborately embroidered. Sometimes a masque effect is achieved in the latter by means of an all-over embroidered design, leaving the masque portion without the embroidery.

Interesting meshes of rather large open design with extremely fine threads holding the design in place are woven with dots in the style known as bouclette—that is, curl or loop. This makes a very light dot, which is at the same time durable and effective. As it is a part of the veil and not lying flat against the surface it is more becoming.

Harem Veils.

Straight over to the harem Paris has gone for the latest idea in veils. Worn with one of the marquise hats—those close-fitting satin or taffeta creations with spreading, winglike sides—the veil is of finest chantilly or of some silk lace. The veil is pointed and long, hanging well below the waist. It is fastened to the hat on each side, at the top of the ear, and allowed to fold softly just over or just beneath the chin. Of course the thin lace does not hide the features, and neither is it any protection, but it is new and it is quaint.

Lace and Beads.

Dinner gowns of black lace are rendered more ornate by outlining the lace pattern with small black beads.

"Complete in Him"

By REV. JOHN C. PAGE
Teacher of Bible Doctrine, Moody Bible Institute, Chicago.

TEXT—Ye are complete in Him.—Coll. 1:10

A Christian woman whose life and labors were fruitful, both in the conversion of sinners to God and the education of the faith of saints, had hanging on the wall of her room, beautifully engraved in a neat frame, the one word "satisfied." She was not satisfied with her service, attainments or experiences, but believing the word of God, "Ye are complete in Him," she was satisfied in heart. The victory of faith was hers.

The only way by which spiritual truth can be realized and enjoyed in experience is by faith. "Abraham believed God." He staggered not at the promise of God, through unbelief, but was strong in faith, giving glory to God and being fully persuaded that what He had promised He was able to perform. This is victorious faith. It asserts that God is true and rests upon His word, rather than upon moods, dispositions or feelings.

When the founder of the Young Men's Christian association, Sir George Williams, lay dying, a friend leaned over his bed and whispered the words of our text, "We are complete in Him." Immediately a smile passed over the face of the dying man as there came to him in those last moments a renewed sense of a Savior in whom nothing is lacking, whose saving work is as complete as He Himself is complete. The Christ of the Bible is a very different person from the Christ of pious fiction, or the Christ of current literature. There is as much difference between the two as there is between the ocean and a dewdrop.

The Preacher's Christ.

A certain gospel minister, whose work has been greatly blessed all over the country, was recently called to the pastorate of the most influential church in his denomination. A reporter from the city to which he had been called waited on him and in an interview asked the minister what he intended to preach in his new field. The reply was "I shall preach Christ there as I have here." "What will you preach concerning Him?" asked the reporter. To which the preacher replied: "I shall preach the Christ of eternity, the pre-existent one, who was in the beginning with God, who is one with God, and the one by whom all things were made. I shall preach the incarnate Christ, who 'because the children were flesh and blood, likewise Himself took part of the same,' that one who, being in the form of God, took upon Himself the form of the servant and was made in the likeness of man; I shall preach the Christ of the spotless life, who was able to look up into the face of God and say, 'I do always those things that please Him; the Christ of Calvary, whose death provided the only atonement for sin by virtue of which sinners may be reconciled to God; the Christ of resurrection life and power; the Christ of sympathy and intercession, the great High Priest, who is touched with the feeling of our infirmities and who is able to save to the uttermost, those who come unto God by him; and the Christ who shall come again in glory. This," said the preacher, "is the only Christ I know, the Christ of the Bible." God be thanked for all such preachers, who have a mighty Savior to preach about. It is because the Savior is what He is that his work is what it is. He is so complete and his work so absolutely perfect, that God, looking upon those who are spiritually united to Christ by faith, can say, "Ye are complete in Him."

Complete in Him.

The first three words of this text could not stand alone in their application to any life. The sense of incompleteness is strong, even in the holiest and best. Of none can it be said, Ye are complete in yourselves, but take the text as it is, "Ye are complete in Him'" and it becomes blessedly true of a great multitude which no man can number.

An important Christian truth and doctrine emerges from this text. It concerns our identification or union with Christ. It is not dependent upon any isolated passage of scripture but permeates the whole of the New Testament teaching. It is a truth from which comfort of heart and strength for labor may be derived. It finds expression in part in the following stanzas by Percy Beard:

Thy grave was mine, Lord Jesus,
Thy Resurrection too.
Lord, Thou hast left for sinners
Just nothing else to do
But claim the victory, satisfied
That I am thus identified.

Through aerial hosts, victorious,
Up to His Father's throne—
The Lamb of God ascended
To claim what was His own;
And seated by His Father's side
I'm with Him now identified.

The great High Priest now seated
Unceasing prayer now makes,
Until He for His footstool
His enemies He takes;
So I with Him must now abide,
In conquering prayer identified.

Shall Renew Their Strength.

Even the youths shall faint and be weary, and the young men shall utterly fail; but they that wait upon the Lord shall renew their strength; they shall mount up like wings as eagles; they shall run and not be weary; they shall walk and not faint.—Isaiah 40: 30, 31.

Anxiety.

Nothing in life is more remarkable than the unnecessary anxiety which we endure, and generally occasion ourselves.—Disraeli.

Noble Examples.

Noble examples stir us up to noble actions, and the very history of large and public souls inspires a man with generous thoughts.—Seneca.

Be Joyful.

Let all those that put their trust in Thee rejoice; let those that love Thy name be joyful in Thee.—Psalm 5:11.

Understand Wisdom.

Oh ye simple, understand wisdom; and ye fools, we of an understanding heart.—Proverbs 8:5.