emergency landing-field, provided with powerful searchlights, approximately every twenty-five miles along this night route, and at points about every two hundred and fifty miles there are regular landing-fields with searchlights visible from one hundred to one hundred and fifty miles when flashed in the air.

The new transcontinental Air Mail is to be operated in three zones—New York to Chicago, Chicago to Cheyenne, and Cheyenne to San Francisco. Pilots will have the advantage of flying in daylight in the first and last zones. Like the railway, the Air Mail has its division points, where fresh planes and new pilots are provided and the pouches of mail loaded and unloaded. Special stamps will be issued—the rate from New York to Chicago being 8 cents an ounce; New York to Cheyenne, 16 cents an ounce; and through to San Francisco, 24 cents an ounce.

The gain will be relatively as great as that which the United States and Great Britain enjoyed when steamships took the place of sailing vessels as mail carriers. In fact, one hour will now correspond roughly to a day of the pony express of sixty years ago. New York morning papers are to be delivered in San Francisco the day following publication; with the pony express, it was usually a month after publication. In terms of transportation, San Francisco is no farther from New York to-day than Philadelphia was a hundred years ago.

The shortening of the continent has been dramatically illustrated by the achievement of Lieutenant Russell L. Maughan, who on Monday, June 23, left Mitchel Field, on the outskirts of New York, at 3:59 in the morning. He made five stops for repairs and refueling on his journey westward, and arrived at San Francisco at 9:44 P.M., Pacific time. His actual flying time was 18 hours and 26 minutes. In elapsed time his journey consumed 21 hours and 45 minutes. This flight was Lieutenant Maughan's third attempt at winning this heroic endurance contest against time.

Rock Dusting—A New Way to Prevent the Spread of Mine Explosions

AMERICAN coal mine operators are beginning to put into practice a relatively new and fairly successful method of limiting coal mine explosions to the immediate part of the mine in which they start. By means of coatings of powdered rock applied in zones to the surfaces of the various entries to the working faces, explosions are confined to one part of the mine instead of spreading all over it. This simple method depends in principle on the fact that, while the accumulations of coal dust that are to be found in all parts of most mines are explosive and inflammable, rock dust is not.

This method has been in use in Europe for a number of years, although its use there was not widespread until the years following the World War. In certain types of mines England now requires rock dusting by law.

According to an instructive bulletin issued by the Bureau of Mines at Washington on the subject of rock dusting, "Operators of the mines in southern Illinois that have installed rock-dust barriers state that these have prevented many coal-dust explosions, which were started by local explosions, from propagating beyond the barrier in the mouth of the panel in which the explosion originated." The technical press, especially "Coal Age," has recently given considerable attention to the subject, and the practice of dusting mines is growing.

How Rock Dusting Accomplishes this Result

WHEN a relatively small explosion takes place in one of the many workings of a dry mine, the sudden rush of air which is thereby occasioned is transmitted violently along the many passages. If dry coal dust lies on the walls and floors of these passages, it is thus "kicked up" and fills the air. Coal dust in this sort of suspension is in ideal condition for ignition and explosion. These conditions are practically identical with those which bring about the great explosions of dust in grain elevators, survivors telling of a primary and small explosion, followed by a great explosion of the accumulated dust thus dislodged, which does most of the damage.

Since January last nearly four hundred lives have been lost in mines owing to spreading explosions. The rock dust now being so successfully employed is simply powdered limestone or shale, and it may be spread by hand, by introducing it into the air which the fans keep supplied to the mine workings, or by means of a hose and nozzle injector carried along the passage being dusted. It is of interest to note that the method of mine sprinkling with water, designed to accomplish the same purpose, is no longer regarded as a practical success. It has been difficult to keep the mines uniformly wet, and the humidity resulting from surfaces kept wet makes unwholesome working conditions for the miners.

When an explosion occurs in some of the many workings of a rock-dusted mine, however, it causes clouds, not of inflammable coal dust, but of non-inflammable rock dust to fill the contiguous passages of the mine, isolating the damage to the place of origin. A secondary advantage gained is owing to the better lighting which is made possible by reflection from walls and ceilings coated with light-colored rock. Better lighting means fewer work accidents.

The Mount Everest Disaster

EXACTLY what happened to cause the death of two members of the Mount Everest advanced attack had not been learned up to June 24. What is positively known as we write is the one tragic fact that George Leigh Mallory and A. C. Irvine lost their lives in the attempt to scale the last peak of the giant mountain of the Himalayas, which rises 29,000 feet above sea-level at the border of Tibet and Nepal.

Three theories are quite possible: one, that the leaders were struck by such a blizzard as had twice driven back the expedition from ground gained by fierce snow and wind; the second, that an avalanche struck them; the third, that a slip or climbing accident occurred such as has so often caused disaster in Switzerland. The President of the Royal Geographical Society, Sir Francis Younghusband, reports that Colonel Norton, the active head of the expedition, used the word "killed" in his brief despatch, and Sir Francis infers that accident rather than exhaustion was the cause. He pays a fine tribute to Mallory as a man of great courage and "a noble, unselfish mountaineer." Irvine was a less experienced mountaineer, the youngest man in the party, but had a fine physique and great endurance.

One often hears the question asked, "Of what value are such dangerous ascents?" George Mallory, when asked

why he longed to reach the summit of Mount Everest, said: "Because it is there. Everest is the highest mountain in the world and no man has reached its summit. Its existence is a challenge. The answer is instinctive, a part, I suppose, of man's desire to conquer the universe."

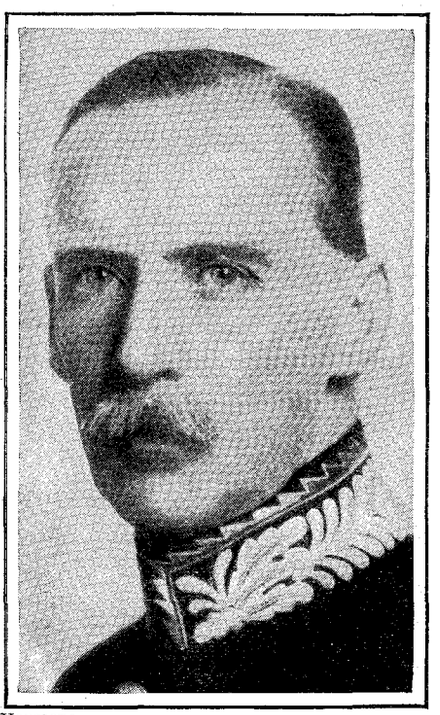
Thus ends the third attempt to conquer the highest peak in the world. The expedition started from Darjeeling in India on March 26 last under the command of General C. G. Bruce (who was by illness compelled to abandon the active leadership), and it was made up of thirteen Englishmen and several native porters. Mallory had been engaged in both the previous attempts—1921 and 1922—and in the latter ascent, together with Norton and Somerville, beat the Duc d'Abruzzi's altitude record (24,600 feet) by 2,200 feet.

Undoubtedly the attempt on Mount Everest will be renewed sooner or later.

Frank Bunker Gilbreth

ONE of the great creative minds among the practical men of this country ceased its service when Frank Bunker Gilbreth died on June 14. He had devoted himself to what he believed to be the greatest task of conservation—conservation of human energy. All about him he saw wasted effort. He saw muscular action frittered away. He saw mental labor employed to little or no effect. He saw motion in all its varied forms ill adapted to good purpose. And he set his mind to work to plan methods for the saving of all this waste of energy. Unlike many so-called efficiency experts, he had a scientific mind. He did not acquire that in the university or technical school, for he had no schooling beyond the high school grades. It may be said for him, however, that he acquired an education vicariously, for his wife received both the bachelor's and master's degree from the University of California. Yet this man became one of the most notable consulting engineers of the country.

He was early an associate with Frederick W. Taylor, originator of the so-called Taylor method of scientific management, and contributed greatly to the science of management in the early years of its development. One of his best-known achievements was in changing radically the method of laying bricks, which had remained stationary as an art from almost prehistoric times. In later years he devoted himself to the minute study of motion. His ingenuity, which had the characteristics of his Yankee ancestry, was devoted to the perfection of devices which enabled him to find out exactly what was the best way of doing anything. He applied his ideas to such widely varied subjects as conveying huge weights and lip reading. One day, in coming into the Outlook office, he said, "I have noticed already five wrong ways of doing something in your office." We asked him what they were, and he said he noted five people folding circulars, and each was doing it in a different way, and that the chance of any one of those being the right way was so remote that he was quite sure every one was wrong. He was convinced that an industrial and economic revolution could be brought about in this country by the application of known ways of eliminating waste in motion. And he set himself to preach the gospel of this conservation of motion for the sake of man. Nowhere were his services more highly appreciated than in Czechoslovakia, and he was responsible for much of what that small European country had contributed to industrial progress. If he had lived, he would have been an interesting and notable figure at the forthcoming Power Conference in London.



Keystone

H. Cunnard Cummins, British Chargé d'Archives in Mexico City, who was requested to leave Mexico by its Government

Personally Mr. Gilbreth was a most engaging man. Hopeful, energetic, genial, vigorous, he radiated energy. He was a great believer in life outdoors and in the development of those fundamental virtues that enable men to make their way against physical and mental odds. He served in the Army as a major of engineers, was pronounced dead, but was revived, and lived to die suddenly in peace through failure of his heart.

It is not unlikely that his discoveries and contributions to the engineering science will affect society more profoundly than many spectacular political changes.

Mexico, England, and Mrs. Evans

FOR years and until recently neither this country nor Great Britain has been on normal diplomatic terms with Mexico. Quite lately Great Britain decided to follow our example in recognizing Obregon's Government and to send out a commission to take up the question in Mexico City. But before the commission started, to use a popular phrase, the Mexican beans were spilled.

Formal recognition and interchange of ambassadors or ministers is not necessary in maintaining amicable relations between nations. Great Britain did not have a *chargé d'affaires* in Mexico, but did have a *chargé des archives,* Mr. H. Cunnard Cummins. Mexico has been complaining about Mr. Cummins for two years, and now has taken just this delicate time to object to him as *persona non grata,* and request his removal under threats of expulsion. Mexico has a perfect right to do this. Mr. Cummins has gone. The commission has not been sent. And the question of recognition is back where it was.

Behind this rather ludicrous incident may lie something more serious. England is not worried about her diplomatic affairs on this side the Atlantic, for she knows the implications of the Monroe Doctrine. But she does care a good deal about protecting English subjects abroad. It is claimed that the real cause of the quarrel between Mr. Cummins and Obregon is the ill treatment of a British subject, Mrs. Rosalie Evans, and that what the Mexican Government considered impudent communications from Mr. Cummins were proper requests that this woman should be protected from invasion and destruction of her property and