

Impracticality of a Practical Education.

I am even so optimistic as to think it not impossible that even the general public will revise its notions of practicality. At any rate, my experience as a teacher has seen one complete change of judgment in this matter, writes Dean Birge in the Atlantic. When I began to teach zoology my teeth were continually set on edge by the well-meaning friends who talked wisely of the practical nature of the study of science as contrasted with language. For the past 15 years, or more, I have heard nothing of this. All are now aware that the study of science is no more practical, and no less so, than the study of philosophy. Today that "practicality" which once seemed to inhere in science is placed in the study of history and of economics. In 15 years more the world may have learned that these new humanities are chiefly valuable, not as furnishing practical guides to the affairs of active life, but that they stand with the old humanities, with the sciences, with philosophy, as furnishing a way into the intellectual life. It may be well that students will learn that in coming to college they are seeking the intellectual life, and that the way in which they reach it matters little, so that the result have in it abundant vitality and many points of growth.

Sport for an Old Whaler.

Whalemen still live in Provincetown, Mass., though they are few in number and lead a life of retirement seldom stirred by events connected with their avocation. A few days ago, however, memories of other days were revived. The life-saving station reported a whale floundering in the fish weirs of the cove. Capt. Joshua Stickney Nickerson loaded up his bomb lance, and with his son rowed a boat to the scene. The harbor was lined with spectators who shouted encouragement. Capt. "Josh" ranged up alongside and, getting the whale as he rolled over on his side, fired the lance with its harpoon head into the vitals. The bomb exploded inside and the whale rolled over dead. It took some time to cut the body free from the wrecked weirs, but it was finally cleared. It proved to be the largest whale caught in this vicinity for several years, and of the right-whale variety. He estimates the products of his prize at 30 barrels of oil and a couple of hundred pounds of bone, which will bring him \$500.

One grammar school of Chicago has solved the vexed question of graduation gowns for the girls, or rather the principal has solved it for them. Classes in the highest grade of the grammar schools have formal graduation exercises because so many of the pupils end their school days at that time, and it has become the custom to make quite a function of the proceedings. As many of the children come from families not able to provide elaborate costumes the question of dress has become a vexed one. The principal mentioned cogitated on the matter, therefore, and issued an order that each girl must make her own graduation gown out of a specified grade of material, before she could have her diploma. These girls will now make their appearance in gowns costing \$1.39 each and with no soreness or hard feelings toward anyone. It was a happy thought.

Toledo cathedral, one of the most magnificent specimens of Gothic architecture in the world, is in serious danger of collapsing, owing to the condition of the central dome. Large cracks have appeared and a recent slight earthquake greatly increased the building's peril. The ecclesiastical authorities are greatly alarmed, and they have ordered the priceless choir stalls removed. A committee of architects urges immediate extensive repairs. The government has been asked to grant \$50,000 for this purpose.

Very hard times are expected in Germany. From month to month the working hours in the textile factories are being further reduced, amounting now to but four days' employment in the Silesian district, while in southern Germany the working time of the textile mills has been curtailed by 14 per cent.

New diamond fields have been found in Africa, this time in German territory. It's going to take an international trust to keep up the price of engagement rings.

Mrs. Agnes Knox Black, wife of Prof. C. Charleston Black of Boston university, has been appointed to the faculty of the College of Liberal Arts of the university as Shaw professor of education. Mrs. Black succeeds Prof. Malvina M. Bennett, who recently resigned.

An Indiana plaso player played for 25 hours in a contest and then fainted. Report fails to state how many of the neighbors were similarly put out of business.

BALKING the GRIM REAPER in MINES

HOWARD E. SEXTON



READY TO ENTER MINE

IN ITS effort to stop the appalling loss of life in the coal mines of the country, the United States government is meeting with much success. For several months an experiment station, under the direction of the technological branch of the United States geological survey, has been in operation at Pittsburg, Pa., with the purpose of discovering the causes of mine disasters and suggesting a remedy.

Along with establishment of this station and the agitation which preceded the necessary legislation, there has been a falling off in the number of deaths in the coal mines for the year 1908, and while the official figures have not yet been obtained, it is stated that the number of deaths will be several hundred less than in 1907, which was an unusual year. In December, 1907, four

ergies to discover some method by which this dust can be prevented from being a serious menace to the miners. Experiments in wetting it have been going on for some time, but nothing of a very definite nature has as yet been learned, unless it is the fact that the coal dust does not ignite when there is a great amount of moisture in it. Every effort is being made at the station to come as close to the conditions in a mine as

of improper explosives, as well as the improper use of suitable explosives, results annually in the waste of great amounts of coal. The use of too high charges in blasting, or the use of unnecessarily violent explosives, shatters much good coal, converting fuel into dust which may itself be explosive and become productive of much further damage. Such explosions often loosen the roof of a coal mine, which may fall later to be wasted, or productive of fatal accidents.

In addition to the actual experiments in testing explosives, important experiments are being made in rescue work. One part of the station has been fitted up as a miniature coal mine. This is a large glass-encased, airtight room which contains difficult passages such as are found in coal mines. There are also various obstructions similar to what would be found in a mine after it had been wrecked by an explosion; also dummies weighing 150 to 200 pounds, representing asphyxiated miners. This room is filled with deadly gas and a rescue corps of men who are being trained in the work enter daily, clad in helmets which supply them with oxygen while they work. The men remain in this chamber for two hours, removing obstructions, picking up the dummies, placing them on stretchers and carrying them away. There is also in the room a machine which records the amount of work a man may be expected to do while wearing one of these helmets. One-half of the large building in which this rescue room is located is used as an auditorium and several hundred miners and

explosions took the lives of 700 men, one of them—at the Monongah mine in West Virginia—being the greatest mining disaster in the history of this country. There were 356 victims. During 1908, there were but two accidents in which the loss of life was very heavy; one in January at the Hanna mine, in Wyoming, with a loss of 70 men; the other, November 28, at the Marianna mine in Pennsylvania, which resulted in 154 deaths.

Already at the experiment station two discoveries have been made which will tend to decrease the number of deaths in the mines. It has been demonstrated that a number of the so-called "safety" explosives are anything but safe, in fact the statement is made that with the present explosives used in mining, the miner takes his life in his hand every time he touches off a fuse. It is the purpose of the government to continue these experiments until the explosives of the country are standardized in such a manner that the miner will have a definite idea what these explosives will do.

Perhaps the most important and far-reaching experiments so far at the station are those in which it has been definitely shown that coal dust is an explosive equally as dangerous as the deadly fire damp. This has been a mooted question among mining engineers and miners alike, both insisting that it is impossible to explode coal dust unless there is gas present. That the coal dust will explode in the mine where there is no gas has been repeatedly shown to several hundred operators and miners at the testing station. The experts at the station are now bending their en-

possible. The tests of various dynamites and powders used in blasting coal are being made in a mammoth boiler plate cylinder which has previously been filled with gas or coal dust. The cylinder is 100 feet long and six feet in diameter. Safety valves have been placed all along the top and are left unfastened in such a manner that whenever there is an explosion the valves fly open on their hinges. A series of portholes on the side, covered with one-half inch glass, enables those conducting the experiments to witness the results from an observation house 60 feet away. An explosive mixture of fire damp and air, or coal dust and air, is pumped into the cylinder and the explosive which is to be tested is shot into it from one end of the cylinder, so that the flame goes right into the fire damp or coal dust. Natural gas is used at this station for fire damp, because it corresponds very closely to this deadly gas. The cannon in which the explosives are placed is fired by electricity from the observation house which is parallel with the cylinder itself.

These investigations are expected to accomplish a double purpose; not only a reduction in the number of men killed in the mines, but also a saving of the waste in mining coal. The use

operators have watched the rescue drill through the large glass windows which separate the auditorium from the gas-filled chamber. Although there has been but little opportunity so far for the rescue corps to demonstrate its efficiency at the mines, still it has done some good work.

Once the helmeted men while fighting a mine fire succeeded in bringing an unconscious man to a place of safety, where he was given oxygen treatment and recovered his senses in a short time.

It is not the intention of the United States government to furnish rescue corps whenever there is a disaster. The present corps was organized with the idea of encouraging the mine owners and miners themselves to form such organizations. Invitations have been issued to operators throughout the country to send picked men to the experiment station, where they may watch the government rescuers at work and later go through the same training themselves, in order that they may gain the necessary confidence in the use of these helmets. Already a number of the large mining companies have taken advantage of this invitation and are organizing rescue corps at their mines, fully equipped with oxygen helmets.

In 1907 more than 3,125 men were killed in the coal mines of the country—a death rate of 4.86 for every 1,000 men employed. This is from three to four times as many men per thousand as are killed in any coal-producing country of Europe, where experimental stations such as the one in Pittsburg have been in operation for several years.

Full Beards for Farmers.
The protection of farmers and others who are exposed to the heat a great deal is a serious and difficult matter. Cancer is on the increase, and farmers furnish a large proportion of the cases, many of them being due to the direct effects of sunlight on the face and hands. A full beard for the farmer is most desirable for his protection.



EXPLOSIVES GALLERY



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