

Exploding Dynamite

Carries with Equal Force in All Directions

By G. WELLESLEY BRABBIT



DYNAMITE explodes with equal force in all directions. This is in response to a query by E. B. Barnard. That force, however, is manifested, as are all other forms of force, in the direction of least resistance. As Mr. Barnard says, "the popular belief is that it explodes with greater force downward." Like most popular beliefs, it is founded on experience wrongly interpreted. By an explosion we mean, speaking physically, the rapid transformation of a comparatively small mass of liquid or solid into an enormous mass of gas. A cubic inch of gunpowder, when ignited, is changed into many cubic yards of gas; a cubic inch of dynamite, when vibrated or given a shock (such as comes from a detonating cap) is transformed into a tremendous volume of gas. Dynamite placed on top of a slab of rock and then exploded will blast the rock; gunpowder similarly placed (untamped) will have little if any effect on the rock. The reason lies in the difference in time necessary to effect the change from the solid (or liquid) form to the gaseous. The elements in gunpowder (whose combination causes the change of state from solid to gaseous) come from different molecules in the mass and therefore require a comparatively long time to cause the "explosion." In dynamite (or nitroglycerin) the combining elements—carbon and hydrogen—are in the same molecule, hence the suddenness and violence of the explosion.

The reason the slab is shattered by dynamite and not by gunpowder is that the slab offers less resistance to the sudden explosive force than does the air above the slab. When we stop to consider the weight of the atmosphere at ordinary altitudes we can see that the exploding dynamite must do one of two things—either lift with almost instantaneous suddenness the whole of the air pressure above it or else break the slab. It does the latter. With gunpowder the comparative slowness of combustion makes it an easier task to push, as it were, the atmosphere away than to break the rock. The principle involved can be illustrated by attempting to lift very suddenly a palm-leaf fan in a direction at right angles to the plane of the leaf, i. e., lift it "flat-wise." The handle of the fan will snap, due to the resistance offered by the air. The same fan can be lifted more slowly, however, without injuring it.

This explains why the force of dynamite is "exerted downward." In scientific parlance, the inertia of the atmosphere is greater than the cohesiveness of the rock.



Where Cheaters Are Given No Mercy

By A. R. HOFFMEYER

Recent dispatches from Paris told of the arrest of a quartet of American card sharps who were accused of swindling rich tourists from their own country at European watering places. It is a sad day for the Yankee crook who gets caught fleeing people by means of cheating at cards on the other side of the Atlantic. I was in Italy some three or four years ago when the police of Naples bagged a couple of American gamblers who had robbed well-to-do and unsuspecting countrymen of theirs of large sums of money. One of these men was formerly in the United States government service, but had lost his position and, forming the acquaintance of a westerner who was an expert cheater, the pair journeyed to Europe for the express purpose of preying upon people who were in quest of such excitement as high play at poker and bridge confers.

The ex-government employe was of an exceedingly winning personality. Affable and entertaining, he could rattle off capital yarns, and every one who met him voted him delightful company. It was no trouble for him to introduce his friend (a wealthy cattle baron from Montana), and it did not take the precious pair of rascals long to get the money. The bogus cattle baron did the actual cheating; the other merely did the roping. But their greed to make a big haul was their undoing and after robbing a young blood from Chicago of \$40,000 he informed on them, with the result that shortly after the complaint was lodged they were occupying prison cells.

In this country it is an easy matter to get out of jail if the accused has some cash, but it is different in Europe. Nobody came forward in behalf of the sharpers, and though they offered all sorts of cash bond the authorities would not accord them liberty. They stayed in prison a year before they were liberated and were warned if ever they came back to Naples they would be taught what real punishment was. Broken in health and spirits, the former employe of the government (who was of a fine southern family) got back to his old home eventually, only to take to his room, from whence he never stirred till he was conveyed to the cemetery.

Opium Smuggling Never Ceases

By Capt. A. H. CHENNEVILLE

Although the United States government has a force of shrewd agents constantly on the watch for opium smugglers at oriental ports as well as in American cities, the wily Chinks are forever bringing the drug into the United States without paying a cent of the tremendous duty—about 100 per cent—imposed on it by our tariff law.

A pair of Chinese sailors were caught in my town the other day who had several hundred dollars' worth of smuggled opium which they had brought over in a freight steamer from Canton. As this boat had making regular trips to New Orleans for months, it is easy to see how many thousands of dollars had been cleaned up by the promoters of the game. A Chinese sailor gets very low wages, but if he can hide a few tins of the poppy product and dispose of it in the first American town he reaches he will soon amass a fortune. After the stuff gets into the hands of a local dealer he finds a ready sale for it.

The users buy it in the form of cards that contain enough for one smoke at a cost of 25 cents. Opium fiends will consume four or five of these cards a day when they have the price, and they will commit any crime in the calendar to get the wherewith for the indulgence of a consuming passion.

SPAIN and MOROCCO



HURRYING FROM THE DANGER-ZONE

If the troubles that beset Spain on the Mediterranean coast of Morocco were not of her own making, there would be a feeling of considerable sympathy with a country almost the last of whose foreign possessions is so seriously threatened. Unfortunately, Spain has brought the trouble upon her own head, or, to be more accurate, the Ultramontane cabinet that misgoverns the country has inflicted them upon her. Most people outside the Spanish cabinet do not require to be told that the Rifians who inhabit the Moroccan highlands overlooking the Mediterranean are a fierce, intractable, unconquered people. Even Muza's Arabs could not reduce them to submission, and the troops of Cardinal Cisneros were equally unsuccessful. It may be said that the writ of the sultan himself does not run far into the Rif country, where the people follow the life that was theirs before civilization visited western Europe, having their own code of honor, their blood-feuds and their internecine strife. Great pirates in times past, they have long given up piracy as a profession, and practice is now merely as a pastime. But they have never ceased to exercise themselves in the profession of arms, and for many years the little wealth they have acquired by their labors on the land and in the field, and by the sale of the herds and flocks they rear, has been devoted to the purchase of guns.

Guns and guns, and still more guns, some coming from England, France, or Germany, many coming from Belgium, large quantities from Spain, and not a few from the sultan's own troops; for it is no secret that when a Moor is tired of serving in the army in return for pay that is always in arrears, he deserts, carrying his beloved gun with him, and sells it to the nearest tribe that does not acknowledge the sultan's authority. Even on the coast beyond Tangier and round Ceuta, Tetuan and Melilla, gun-running has been carried on openly more than once within view of the writer. The guards on the beach have been squared or tricked, and convoys have been waiting within a mile of the landing-place to carry the precious weapons into the mountains. So it happens that the Rifians are well armed, and they are fighting because their territory has been violated. Indeed, if they had white skins and a code of western morality, they would be in serious danger of being called patriots instead of rebels.

The position in which Spain finds herself is one of extreme difficulty. Senor Maura, the premier, is an obstinate reactionary. The country is incensed against the war party. Spanish finances are in their chronic state of weakness. The cost of subduing the Rifians in money alone, to say nothing of blood, will be enormous. If the government does not fall, if eastern Spain can be pacified, if 50,000 troops can be sent to Melilla and the other presidios of Spain in Morocco, if the Rifians can be driven off and their mountain strongholds can be destroyed, it is hard to see what Spain can hope to gain beyond a measure of glory and a bill, that bear the same relation to one another as the bread to the sack in Falstaff's famous tavern account. There is not enough money in all the country of the Rifians to pay the bill that Spain has incurred already, and though some attempt may be made to saddle the sultan with responsibility, it is well known that Mulai el Hafid is no better able than Gen. Marina to control the tribesmen. Nor is the country of the Rifians calculated to tempt sane men to conquer it. It is wild, rugged, inhospitable, and can scarcely yield a living even to those who have been brought up in it. It could only be kept at the point of the bayonet, for even if Spain had a surplus population, there would be no temptation for emigrants to settle in such a wild and unproductive land. Spain has no colonists, she needs more population, and consequently there is absolutely no room for an imperial policy in Africa.

If Senor Maura were less obstinate and the rulers of Spain less proud, one and all would see the advisability of retiring at once from an untenable position before the wounds inflicted upon the nation by the Cuban troubles and the American war broke out afresh. Nobody doubts the bravery of the Spanish troops; they have, and deserve a splendid reputation. But mere bravery will do very little in a campaign carried on under conditions with which the Spaniards are



GENERAL MARINA INTERVIEWING A FRIENDLY MOOR

wholly unfamiliar. The veterans of the Cuban campaign, who have been sent to Melilla because the government is desirous of keeping its most effective forces at home to deal with popular discontent, have not fought against mountain tribes. The season, too, is against them; the Rif country is passing through the hottest time of the year, and though the Spaniard is well insured to heat, he can hardly be expected to carry on an active campaign under the intolerable glare of the African sun in August. To make matters worse there are rumors that the equipment of the soldiers is not as good as it should be, and that the preparations for a foreign campaign are inadequate. The suspension of constitutional guarantees throughout the country and the suppression of news from the seat of war are clear signs of Senor Maura's intention to rely upon bayonets at home and abroad. It is in vain that those who wish him well remind him publicly and privately that he is "jugando con el fuego" (playing with fire). He is playing a gambler's game. If the Spanish forces succeed in Morocco he will be able to crush the republican and labor parties in such a fashion that they will not be able to lift their heads while he remains in office. He knows now, if he did not know before, who and where are the most determined enemies of his absolutism. If, on the other hand, the Spanish arms meet with further severe reverses and there is an insurrection in Spain, he will have lost nothing by holding out to the last. The whole tragedy of the business lies in the fact that the Rifians did not wish to fight and the Spaniards did not want to fight; but the central government in Madrid has ignored the wishes of everybody, and has plunged the country into the adventure that may result in a disaster of the first magnitude.

MOSQUITOES KILL CATTLE

Continual Warfare Waged by Inhabitants of Cheniere au Tigre.

B. M. Foster and T. A. Dees returned home from Cheniere au Tigre, an island south of Abbeville, a Houston Post's Lake Charles (La.) correspondent says. Great myriads of large mosquitoes caused the party to return home at once. Mr. Foster is authority for the statement that many head of cattle are being killed by the pests and that the people of the island would suffer a like fate if they ventured out. Day and night the inhabitants are compelled to fight constantly against the little pests and what small farm work is done on the island has been sadly neglected.

Mr. Foster says that the cattle on the island can usually be found in herds of about 100 each, but the mosquitoes have caused the animals to flock together for protection, and he saw one big herd with fully 10,000 animals bunched and bellowing with pain. The cattle, he says, keep moving to the windward to keep the pests off as much as possible. Occasionally one will become exhausted and fall behind, or a cow will stop to help its calf, only to meet a hasty death. Some animals Mr. Foster saw have actually been smothered to death by the great swarms of mosquitoes.

"No one who has not witnessed conditions on the island is able to form any idea of what the people and stock have suffered," concluded Mr. Foster.

Outing for Convicts.
A new use for convicts has been found in Missouri, where a number were taken out of the penitentiary at Jefferson City and put to work on the Calloway bottoms helping the farmers save their wheat from the advancing waters of the Missouri river. The prisoners worked well, enjoyed their outing and would welcome another chance to get outside the walls.

VALUE PAINTED ON.

Well painted is value added whether the house be built for one thousand dollars or ten thousand. Well painted means higher selling value, and higher occupying value—for there's an additional pleasure in living in the house that is well dressed.

National Lead Company assist in making the right use of the right paint by sending free upon request to all who ask for it, their "Houseowners' Painting Outfit No. 49." This outfit includes a book of color schemes for either exterior or interior painting, a book of specifications and an instrument for detecting adulteration in paint materials. Address National Lead Company, 1902 Trinity Building, New York City, and the outfit will be promptly sent to you.

NOTHING DOING.



He—I'd kiss you if I dared.
She—Well, don't you dare to if that's the way you feel about it.

LOW COLONIST FARES TO THE WEST AND NORTHWEST.

Union Pacific Passenger Department announces that Colonist Fares will be in effect from Sept. 15 to Oct. 15, 1909, to all points in the West and Northwest.

This year the West looks more promising than ever. Now is the time to secure land at low prices, and, at the same time, to visit the many interesting points in the West and Northwest, at which liberal stopover arrangements may be made.

A better estimate of raw lands can be made now than formerly, because these lands are in proximity to new farms that are producing wonderful crops.

For descriptive literature, write to E. L. Lomax, G. P. A., U. P. R. R., Omaha, Neb.

It Was His Way.
A Kansas farmer was telling recently about the eavesdropping that goes on along the farmers' telephone line he is on. He said that whenever he talked he could hear the "click, click" of different receivers coming down. "And you can bet," he amended, "that they never hear my receiver coming down. No, sir; I always hold on to the thing and let it down so easy that it doesn't click!"—Kansas City Journal.

The extraordinary popularity of fine white goods this summer makes the choice of Starch a matter of great importance. Defiance Starch, being free from all injurious chemicals, is the only one which is safe to use on fine fabrics. Its great strength as a stiffener makes half the usual quantity of Starch necessary, with the result of perfect finish, equal to that when the goods were new.

A Suspicious Silence.
Howard was only 20 months older than the baby. He had somehow come to realize that Elwood, who was creeping, was more likely to be in mischief when quiet. One day he called to his mother with a great deal of anxiety in his little voice: "Mamma, I hear Elwood keeping still!"—The Delineator.

Brooklyn Flag Factory.
One of the biggest official flag factories in the world is in the Brooklyn navy yard. Between eighty and one hundred women work there all the year round making flags for the use of Uncle Sam's fighting ships. They use up 120,000 yards of bunting a year and fashion 418 different kinds of official flags. The flags cost \$90,000 a year.

What Did She Mean?
He was reading to Miss Bragg his poem on "Love," as printed in the Boomtown Bugler. She said: "Oh, cut it out!"—Judge.

Do your feet ever feel tired, achy and sore at night? Rub them with a little Hamlin's Wizard Oil. They'll be glad in the morning and so will you.

Speaking of literature, many a man's love letters have made a decided hit—with a jury.

There's a rich, satisfying quality in Lewis' Single Binder that is found in no other 5c cigar.

Many a well-developed woman has been modest to thank for it.

No Man is Stronger Than His Stomach

A strong man is strong all over. No man can be strong who is suffering from weak stomach with its consequent indigestion, or from some other disease of the stomach and its associated organs, which impairs digestion and nutrition. For when the stomach is weak or diseased there is a loss of the nutrition contained in food, which is the source of all physical strength. When a man "doesn't feel just right," when he doesn't sleep well, has an uncomfortable feeling in the stomach after eating, is languid, nervous, irritable and despondent, he is losing the nutrition needed to make strength.

Such a man should use Dr. Pierce's Golden Medical Discovery. It cures diseases of the stomach and other organs of digestion and nutrition. It enriches the blood, invigorates the liver, strengthens the kidneys, nourishes the nerves, and so GIVES HEALTH AND STRENGTH TO THE WHOLE BODY.

You can't afford to accept a secret nostrum as a substitute for this non-alcoholic medicine of known composition, not even though the urgent dealer may thereby make a little bigger profit. Ingredients printed on wrapper.

PATIENT SUFFERING.

Many Women Think They Are Doomed to Backache.

It is not right for women to be always ailing with backache, urinary ills, headache and other symptoms of kidney disease. There is a way to end these troubles quickly. Mrs. John H. Wright, 606 East First St., Mitchell, S. D., says: "I suffered ten years with kidney complaint and a doctor told me I would never get more than temporary relief. A dragging pain and lameness in my back almost disabled me. Dizzy spells come and went and the kidney secretions were irregular. Doan's Kidney Pills rid me of these troubles and I feel better than for years past." Sold by all dealers. 50c. a box. Foster-Milburn Co., Buffalo, N. Y.

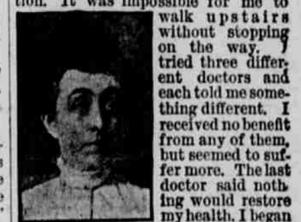
If you sit down and wait for your ship to come in don't be surprised if nothing but a wreck drifts in with the tide.

Mrs. Winslow's Soothing Syrup. For children teething, softens the gums, reduces inflammation, allays pain, cures wind colic. 25c a bottle. Her string is soon worn out if a girl has too many beaux.

AFTER DOCTORS FAILED

Lydia E. Pinkham's Vegetable Compound Cured Her.

Willimantic, Conn.—"For five years I suffered untold agony from female troubles, causing backache, irregularities, dizziness and nervous prostration. It was impossible for me to walk upstairs without stopping on the way. I tried three different doctors and each told me something different. I received no benefit from any of them, but seemed to suffer more. The last doctor said nothing would restore my health. I began taking Lydia E. Pinkham's Vegetable Compound to see what it would do, and I am restored to my natural health."—Mrs. ERRA DONOVAN, Box 290, Willimantic, Conn.



The success of Lydia E. Pinkham's Vegetable Compound, made from roots and herbs, is unparalleled. It may be used with perfect confidence by women who suffer from displacements, inflammation, ulceration, fibroid tumors, irregularities, periodic pains, backache, bearing-down feeling, flatulency, indigestion, dizziness, or nervous prostration.

For thirty years Lydia E. Pinkham's Vegetable Compound has been the standard remedy for female ills, and suffering women owe it to themselves to at least give this medicine a trial. Proof is abundant that it has cured thousands of others, and why should it not cure you?

SICK HEADACHE

Positively cured by these Little Pills.

They also relieve Distress from Dyspepsia, Indigestion and Too Hearty Eating. A perfect remedy for Dizziness, Nausea, Drowsiness, Bad Taste in the Mouth, Coated Tongue, Pain in the Side, TORPID LIVER. They regulate the Bowels. Purely Vegetable. SMALL PILL. SMALL DOSE. SMALL PRICE.

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