

Arbuthnot Hamilton's Experiment

AN element which, if contained in a 10lb. bomb, would blast a hole 25 miles in diameter and more than a mile deep, and wreck every structure within 100 miles, is being developed by American scientists. This was revealed by John O'Neill, president of the National Association of Science Writers, at the annual conference. The United States Government has taken over the control of the scientists working on the application and control of the discovery, and its development for war purposes is being investigated.—Recent cabled news item.

JUST in case some literal minded people take the following tale too seriously, let me assure them that my friend Arbuthnot Hamilton is not one of the scientists referred to above, and that there is little real danger of the suburb where I live being blown to Kingdom Come. Also that, in point of fact, the characters in this story are entirely fictitious, as they say, and any resemblance to living persons, etc.—J.G.M.

I THINK the time has come when, in fairness to everybody concerned, and especially to my friend Arbuthnot Hamilton, the general public should be told the truth about those mysterious explosions which have excited so much attention in our neighbourhood during the past few months. Although it is a surprising story, to say the least, I shall not garnish it with unnecessary details or corroboration. I intend to relate the bald facts and leave it at that. Corroborative proof, I imagine, will not be long in forthcoming.

What I have to tell will be of particular interest to those good people in our street who have been disturbed and worried by the explosions I have referred to. Looking at the whole business dispassionately, I cannot blame them, and in view of what may happen at four-thirty this afternoon, those who have evacuated from the district altogether can only be commended for their caution.

BUT let us start from the beginning, which is the day three years ago when Arbuthnot Hamilton came to board at our place. He turned up in reply to an advertisement we put in the evening paper: "Private board offered refined young man. Single room. Plenty hot water. Two sections. Quiet." My mother had no hesitation in deciding that Arbuthnot would be an ideal boarder. He was a tall, thin young man with a slight stoop, thick-lensed glasses and a quiet, studious manner. He was employed as an industrial chemist at some soap works just outside the city, he said, and he assured us rather apologetically that he neither touched alcohol nor went to the pictures. Most of his spare time was spent in scientific experiments, and he hoped that my mother wouldn't mind if he set up a few test tubes and retorts in a corner of his room.

My mother said not at all, though when Arbuthnot's baggage arrived, we wondered how his room could possibly hold all his scientific gadgets. Not unnaturally, we were most interested, but once he was established, Arbuthnot

frowned on our curiosity and even refused to allow my mother to clean his room. Every morning as he went to work he would lock his door, leaving us only a tantalising glimpse through his closely-curtained windows of a maze of glass tubes, retorts, jars and electric wires. At night, when he was engaged in his experiments, all we could hear was the bubbling of liquids, the clink of glass, and the occasional crackle of an electrical discharge.

It was all very intriguing, I can tell you, especially since I had taken inorganic chemistry and electricity and magnetism at school. When we got to know each other better, Arbuthnot would sometimes discuss scientific subjects with me, though never once did he give a hint as to the nature of his experiments, and never once did he invite me into his room.

A Short Story by J. GIFFORD MALE

ONE evening, however, we were startled by an explosion which literally shook the house. This was followed by a crash of glass and a cry of pain from Arbuthnot. My mother, who has been prophesying something of the sort, promptly fainted. Having disposed of her on the settee, I pulled myself together and rushed into Arbuthnot's room. He was sitting on the floor holding his head in his hands, and I was relieved to see that although his eyebrows had disappeared entirely, he seemed otherwise uninjured.

He was still dazed, and as I helped him to his feet he kept muttering, almost in the words of Archimedes, "I've found it, I've found it."

"Mother's going to be awfully angry," I said.

"I've found it," he repeated. "This is tremendous. It's the biggest thing since radium. It will put an end to war."

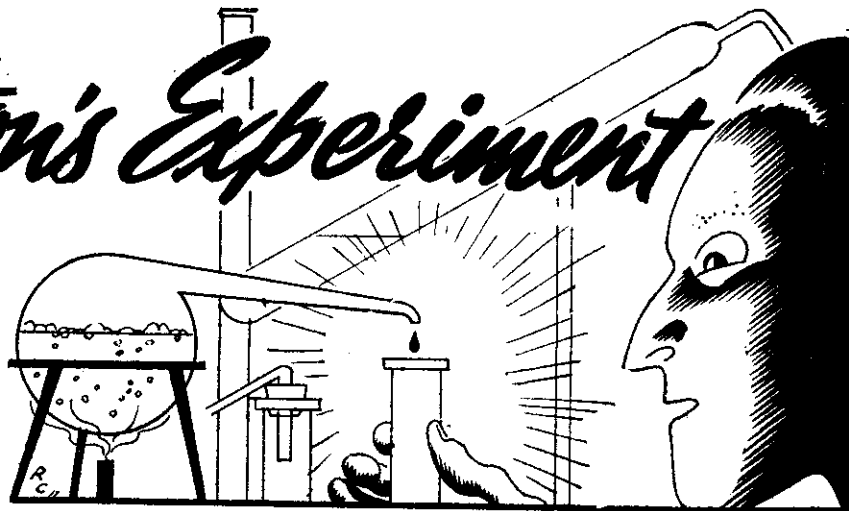
I thought he had gone out of his head, but later in the evening, when we had cleaned up his room and my mother had recovered, he explained to me, under oath of secrecy, what had happened. I can tell you, my eyes nearly dropped out of my head.

It seems that in the course of an experiment about a year before, Arbuthnot accidentally stumbled across a principle which, carried a step further, would obviously generate an explosive of tremendous force.

"Gosh," I said.

"Yes," said Arbuthnot. "You've heard about atomic power, haven't you?"

"Gosh, yes," I said.



"Well, this is something similar, half-way there, as it were," he continued. "It's like this. . . ."

I WAS bewildered, of course, by the complexity of his explanation of what had happened, but I did gather that, having stumbled on this new principle, he was appalled at the responsibility resting on him, and his first thought was to destroy the notes of his experiment and try to forget all about it. But the more he pondered it, the more convinced he became that his duty was to continue his researches. He owed it to mankind, as he felt sure that the knowledge that such a terrible explosive force had been discovered would put an end to war for all time. He had worked it out that a bomb filled with ten pounds of this explosive would blow a hole in the earth twenty miles across by a mile deep, and would cause desolation for a hundred miles around.

Arbuthnot had been frightened to take his discovery to any other scientist for help and further knowledge of the terrible forces he was apparently on the point of unleashing, so he worked on by himself, as privately and as quietly as he could.

He was quite aware of the danger involved, and he was deeply apologetic about having exposed my mother and me to danger also. He hoped, however, that I would appreciate the necessity for continuing the work.

The explosion which had alarmed us so was due, Arbuthnot explained to the premature release of not more than two or three molecules of the compound which contained the explosive principle. Coming at that particular stage of the experiment it had given him conclusive proof that he was on the right track, but at the same time it was a warning that if such small mishaps could not be prevented, it would be hazardous indeed to proceed any further. He was prepared to take the risk himself, but he realised that he could not go on indefinitely causing shattering explosions in the bedrooms of other people's houses.

WELL, the upshot was that after lengthy discussions, in which I was gratified to note that he treated me with

the respect due to a fellow sharer of his secret, we decided to dig an underground laboratory. We hinted to my mother of gravity of the situation, and she agreed that this would save considerable wear and tear on the bedroom furniture.

The laboratory being of paramount importance, Arbuthnot suspended his experiments for nearly two years, in which time, working secretly by night and during week-ends, we devoted all our energies to sinking a shaft in the back garden fifty feet deep, and from the foot of the shaft a gallery eighty feet due north to a point which we estimated was directly below a patch of begonias on our front lawn. The shaft and gallery were both safely timbered and lined, and after that we set about excavating the actual laboratory. This we made fifteen feet by ten feet, by nine feet in height, and it, too, we lined with the stoutest timber we could buy, buttressing the whole laboratory so rigidly that we felt nothing short of an earthquake would disturb us. The opening of the shaft we had artfully concealed beneath a large rhododendron bush, and in every way we were confident of secrecy from observation by curious neighbours.

One sensible precaution Arbuthnot took was to build a low concrete wall behind which he could shelter while at work. This would afford sufficient protection against explosions caused by the displacement of small numbers of molecules, though he and I both realised that a major displacement would mean the end of everybody in the neighbourhood—the end of the neighbourhood, in fact.

SO, six months ago, Arbuthnot resumed his experiments, with myself as his enthusiastic helper. But before very long it became obvious that everything was not going smoothly. One Saturday afternoon I was working in our front garden, Arbuthnot having no need of my help at the moment, when a dull boom came from beneath my feet and the begonias trembled and the earth itself shook. I hurried below ground to find the laboratory full of acrid fumes and Arbuthnot crouching behind his concrete wall.

"That was a near one," he said with a wry smile. "Nearly blew my eardrums out."

I expressed alarm, and suggested that he discontinue the experiments, but with the disregard for self of the true scientist, he insisted on carrying on. Un-

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