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FARNSWORTH WRIGHT, Editor.

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The ROOC

by

GEORGE B.
TUTTLE

IT SEEMS strange, now, that the first newspaper report of the stupendous menace received so little space, and was so frivolously treated:

Pierre, S. D., Oct. 29, 1929. (Special.)
An enormous bird swooped from the sky to the farm of James French, in Clinton Township, twenty miles from here, yesterday. He picked up an ox in his talons, and flew away with it.

Local scientists think that it was a plesiosaurus (sic) that has somehow survived from prehistoric times.

[Editorial note. The "local scientists" have probably confused "plesiosaurus" with "pterodactyl." The former was a large water reptile with a long neck. The latter was the ancestor of birds and the first vertebrate to fly. Of course it was really a large eagle, which flew away with a lamb.]

The great Chicago paper that printed the item above was somewhat sarcastic about the flying monster, but was very careful, just the same, to put the story on the front page. Its news judgment was vindicated, and its scientific comments riddled when similar stories appeared in the evening papers.

Various points in the Dakotas, Iowa, Minnesota and Illinois reported





"The slaughter was fearful, and not only among the rocs."

visitations of the same kind. Near Davenport, Iowa, a man was snatched up in the fields; another in Rochester, Minnesota. Two stories of cattle being carried away came from other correspondents. The star happening, however, was at Cairo, Illinois, where old John, the famous Ringling circus elephant, was taken while the parade was forming.

This attack was in the presence of thousands, who were able to give a fairly coherent description of the event. A bird, much like an eagle, but of a wing-spread variously described as from two hundred to five hundred feet, swooped from the air, "just like any hawk," fastened his claws into old John, and flew away

with him without an effort. A faint trumpet was the last heard of the elephant.

The press agent of the show knew his *Arabian Nights*, and furnished a possible clue. "Of course I don't know where it came from, nor the genus and species, but in Lane's *Arabian Nights* there is an old line drawing of a roc carrying off an elephant. When this bird came down, and took off old John, it was like a reproduction of this picture."

It was very plain that the rocs, as the public at once named the flying raiders, were to be a problem to the West, and possibly to the whole country. They were ferocious and too powerful to resist except by heavy firearms. A bird that could pick up the largest land animal in its claws and fly away with him could only be dealt with by military methods.

And no ordinary methods, either. Anti-aircraft guns? Millions would be needed to protect the menaced territory. Their doubtful success in the war did not inspire much confidence.

Fire to fight fire; planes were what were needed: many to be ready on the ground to go in chase at the first word of the rocs' appearance; others to make a systematic search for their resting-place. They obviously could not stay on the wing all the time. Somewhere there must be an eyrie—a giants' eyrie.

Naturally the discussion of their whereabouts raised the question: "Where did they come from before they started raiding?" There were the many wild theories usual in a mystery. The Sahara Desert, Mongolia, Papua, the North Pole were suggested. One enterprising newspaper editor had the idea that they might have come out of "Symmes' Hole," told of by an American many years ago as an opening at the North Pole to the hollow interior of the earth, and said to be a pleasant place of habitation. He asked Dr. Cook in his prison cell at Leavenworth if he

had seen "Symmes' Hole" when he was north. That worthy, however, was through. His answer was that he wanted to see nothing but the outer air, and had nothing to say about the Pole.

"A dark planet near the Perseus meteors," was the suggestion of an amateur astronomer. "In August we passed through that cloud of meteors. They are thought to be part of a broken-up comet and appear annually. It is very possible that there is a larger mass, forming a small planet, near or among them. On this planet dwell these, let us call them, rocs. This year it may have come so near the earth as to mingle the two atmospheres. A number of the rocs, inhabitants of the planet, accidentally stayed with us. We know that other worlds contain stones and gases similar to those comprising our earth. The spectrum teaches us that. And the meteors that fall are from outside our sphere, but are of familiar minerals. What more possible than that the atmosphere of this dark planet is similar to that of our own, and that these birds, much like some here, but larger, have developed? If the air is similar, they could live here."

This explanation was generally accepted.

I, Henry Latham, began to figure in the conflict from the very beginning. I was a reserve officer in the United States army. During service in France I had flown an observation plane. My work had been very successful because of an inborn taste for angles and geometrical planes, which I had developed by much study. Neither promotion nor fame had come to me. Making photographs of enemy areas is a useful part of war, but does not bring one to the knowledge of one's superiors. I was no ace, in fact never brought down an enemy plane. A couple that interfered with my work did, it is true, come down of themselves, but no one paid any attention to that.

I was in the air service of the reserves and at once began to make myself useful in what was recognized as an emergency.

For the rocs were busy. They raided everywhere, taking cattle, men, horses. No one could discover where they came from or whither they went.

EFFORTS were soon begun to combat the invaders, but with little success. Every available army, navy and mail plane was mobilized, armed with machine-guns and bombs, and sent to the Middle West. I assisted in mapping out their disposition, and my work attracted favorable attention from the war department. I was promoted to major, and put in charge of seeing that the machines were regularly and evenly distributed.

"Put them so that they will be at exact distances apart," I was told. This did not seem to me to be the proper disposition for what was really a military problem. An army is not distributed in that way, but is massed. It was not the time to criticize, however, but to obey orders.

Results were quick. Smithtown, Michigan, was the scene of the first clash between a most highly developed instrument and a living creature far surpassing any of the so-called "brutes" with which we are familiar. For it was apparent in a flash that we were dealing not only with size and strength, but brains. Alfred S. Fowler, a competent, trained aeronaut, as it happened, a soldier in full air training, took off against a roc that he saw hovering. Confident in his machine-gun, he went right after him. In doing so, he showed that man has not quite mastered the technique of the air. No bird would have risen right under another one that might attack him. He would have known that his enemy would swoop.

The roc did swoop, and Fowler never had a chance. The manner of the dip showed the intelligence of the invader. He did not grasp the

machine in his claws, as a clumsy eagle greatly enlarged, but with an eagle's feeble brain, would have done. That, he seemed to know, would tangle him in a mass of wires and metal. Instead, he hit the side of the machine a tremendous blow with his talons. An airplane's equilibrium is not very great, and it went spinning in the air, over and over, until it crashed, with the aviator inside.

Then a curious thing happened. The bird hovered over the wreck, looking it over very critically, and finally alighted and gave it a thorough inspection. It smelt it, eyed it carefully, and made gingerly little pulls at it with beak and claws, as a cat does at something of which it is not sure.

Fowler, quick-brained, tried to out-guess the bird by keeping still. It was to no avail. A great claw fished into the fuselage after him, caught him, luckily, by the strap of his parachute, and fished him out.

Let him tell his own story, as related after his rescue:

"I naturally expected death, but the roc evidently had another aim than breakfast. He eased me out as carefully as a friend would have done. It is a twisting job to get out of a plane by yourself, but he dropped and turned me at just the right times. I did not hit a wire with my body, and was just easily scraped against the side of the fuselage. Not hurt a bit. Then he picked up the plane in his beak, and flew off. It was wonderful to see the extreme care with which he maneuvered to get himself in flight without hurting me. His claw was so large that the parachute strap was caught only by the very end. (They were afterward found to be eighteen inches through at the thickest point.) He lifted the foot that held me, and hopped along on the other one to get in the air. The whirring wings beat the air like a cyclone, and the wind from them felt like one. After a

little time he got up, and then flew easily. He was so big that the plane in his beak did not hamper him at all. As for me, well, my weight was nothing, to him.

"Caught as I was only by the parachute strap, as soon as I was in the air I began to have great hopes of escape. It was getting dark, and if I could drop, the roc would lose sight of me. By the developments of modern science, it queerly happened that the height at which I was flying in the air, which would formerly have made my sole temporary salvation the attachment to my captor, would give me an opportunity for an easy escape. I had a good parachute on my back, and had dropped in one at least a hundred times. The risk was slight.

"I began to think of my report to my officers. 'Think!' That was it! As soon as I began to make my plan, the bird seemed to know something was going on in my mind. My plan, of course, was to cut the strap that held the parachute to the claw. Parachute and I would drop, and I would make my landing.

"Just as I reached up with my knife to cut the strap there was an uneasy quiver in the great claw that held me. It reached up, the other claw curled, and I was snugly deposited, parachute and all, in the clutch of that other talon. This time the bird had divined that the strap of the parachute was not a part of my body, and was taking no chances. I was firmly held, but not hurt.

"'These birds are mind-readers,' I said to myself, and it was not slang, either. In sober earnest I conceived the idea that their brains worked in tune with the thoughts of each other, and, more imperfectly, with those of other beings in their neighborhood, in whose affairs they were interested. Their unity of action showed that they have plans for carrying out what they start, and their adaption to unforeseen events makes it clear

that they can simultaneously change those plans to meet new circumstances. Communication by cries would be too crude for their wonderful maneuvers, and besides, the cries have not been heard.

"The delicate, ethereal force that we call mind, which we suppose, but are not sure, is worked by the brain, must be, for them, in tune with other minds; not blunderingly, unconsciously, after the manner of the mind-reading of human beings, but in a conscious, highly developed manner, as an effort of the will. These birds are beings, dependent on themselves. They have no weapons, except the terrible ones of nature. They carry no wireless apparatus of any kind. The human race is in for it. It is mind against matter. They have the minds, we the matter, by our technical skill, developed in the last century and a half.

"We were flying along at great speed. I am a skilled aeronaut, used to estimating distances up to two hundred miles an hour. The rate was higher than that (afterward calculated at about four hundred miles). Luckily I had on my flying-suit, and the roc, being of the order of eagles, pulled his comparatively short legs close up to his body, instead of dropping them like a wader.

"I was thus protected from the cold breeze that blew direct from the Arctic. 'Shall we be in the Arctic soon?' I began to think. 'Or at the Pole?' I have read of Symmes' Hole, supposed by an American writer of that name to be located there, where latitude ends. He fancied it as a depression reaching down to the center of the earth, large enough for a continent, and with a warm climate. Since his time Peary and the Nobile and Wilkins expeditions have gone over the Pole and reported it not different from other Arctic regions. So I dismissed the Pole from my calculations. I was soon to find that Symmes had a glimmering of the

truth. Locality and surface were different, but the open interior existed.

“THERE is a ‘blind spot’ between Point Barrow and Spitzbergen. It had never been explored before the roc raid. That, I guessed as we neared the ground, and confirmed afterward, was our destination. It had very evidently been the theater of cataclysmic earth changes within a short time. The world’s seismographs had been recording great earthquakes ‘somewhere,’ but cables and mails had not shown where. This ‘blind spot’ was the place. It had been a region of geysers, hot springs and volcanoes, like the Canadian Rockies, but on a great scale. The earthquakes had made the whole area the world’s greatest ‘fault.’ For many miles the surface had fallen in and disclosed the world beneath. This was where the rocs had lived, bred and developed for countless ages.

“We flew into the great depression, with raw earth showing at the sides, where the cave-in occurred, and were in the bird’s own world. We swung in under the opening and had a new sky above us. Hardly a sky, as it was only the rock roof of this inner world. In places the depths were unfathomable to the eye. I realized that to birds with wings such an uneven floor was a matter of small importance. Man progresses easily only on a fairly level surface. Levels mean little to a bird. He hardly notices them, surmounting them by the gift of wings.

“There was plenty of light through the holes in the roof, or sky. They were of all sizes, from three feet to fifty across, and were the vent-holes of drained geysers and extinct volcanoes. The surface was only a few miles thick, I thought. At intervals solid masses of rock rose from the floor to the sky and were, I thought, vent-holes for living volcanoes and geysers. They probably furnished

warmth. At any rate the air, although we were far north, was pleasant.

“As we flew along we were joined by flocks of rocs of many sizes. Some of them had evidently just learned to fly. I had that uncomfortable feeling of examination of my thoughts, not a thought transference—for I received merely a consciousness of communion—but rather an examination. They were probably puzzled, too. As the slang saying goes, ‘We did not speak the same language.’ That is, our ideas did not run on similar lines, and they must have had to interpret mine somewhat as one would read a cipher.

“It flashed over me that they could not give me much of a physical ‘third degree.’ They were too strong and I too weak. The slightest violence would kill me. Anyway, there was very little that they could learn from me. I, and my kind, worked with tools of various kinds, and we used our brains to direct and perfect our mechanical efforts. They do everything for themselves, and very little it is, with the wonderful bodies nature has given them. Their minds are superdeveloped because they have for millenniums been in this sheltered spot, with plenty of animal food available, and no forces of nature to fight, and nothing living that could cope with them.

“All around me on the ground were harmless grass and foliage eating beasts, mostly of the antediluvian type. There were mammoths, not so hairy in this pleasant climate as those dug out of the Arctic tundras, stags like the giant elk from Irish bogs, mastodons, with two pairs of tusks, one pointed up and the other down, ox-like creatures that were probably aurochs, and others whose reconstructed pictures or forms I had never seen in books or museums. ‘An easy living they have,’ I thought, and simultaneously was aware that they had in a general way divined what was in my mind.

"We alighted on a level spot and my captor unclutched his claw and let me roll out on the ground. I was unhurt, and being used to desperate situations in my war experience, unflustered, but realized my predicament. Not only was I doomed to death but before that I was going to undergo an inquisition of the brain. The death would be quick, and not so much to fear, but the search of mind might disclose something that would betray the human race, of which I was a member, and lead to its destruction.

"It occurred to me that the birds' minds could only read a thinking brain. Like a criminal who baffles his interrogators by not talking I was resolved not to think. Deception was impossible. They could detect it. I must keep my mind blank as I could.

"Then ensued a scene to which only the pencil of a Doré could do justice. I sat, a mite among the towering rocs, their gaze and brains concentrated on my small self. In spite of all I could do, some thoughts chased through my mind; I was unable to keep it off the general subject of the war of air and earth and gave vent to my curiosity.

"It was easy to divine how the rocs had developed as they had. Above had been the small openings in the vault of the earth's crust. They admitted light and air, but were too small for such enormous bodies to go through. The birds had never made use of tools, and so had not enlarged the holes for exit. The recent earthquake had freed them from the underground world, and curiosity led them to fly out above ground. Men, oxen, horses, and the circus elephant had been a tempting change of food to these carnivores, and they had feasted on them.

"The fight put up by men, the smallest of their victims, had alarmed their keen brains, and made them resolve to see how the machinery went. My capture and that of the plane had

been the result. They were sizing us up.

"The silent inquisition continued some time, I hoped without result. Just how much they had learned from me I could not tell. My idea that they could communicate only with a working brain was only a guess, born of hope. It was very plain that their minds were much more highly developed than those of a human being, and very possibly they could explore the inmost thoughts of one so inferior in intellect.

"The seance was interrupted by several explosions. The daring Latham (he who has worked so much by formulæ would resent the epithet) had flown into the opening, seen the gathering of enemies of his race, and dropped some bombs on the throng, intent upon their examination of me. Several had been killed and injured, and there was much confusion. He guessed that I might be there, swooped over where the center of the throng had been, spied me, threw me a rope, and we were off. That is about all that I know of the rocs, and it is enough."

HERE let me, Henry Latham, take up the story again:

When I heard that Fowler had disappeared the thought at once struck me, "Has he not been captured alive? These birds are intelligent. They want one of us for critical examination just as much as we want one of them. He has been taken to wherever they live. And I think I know where that is."

Keen Canadian ex-soldiers, trained in the late war to observe and remember, had seen these birds high in air. First one man, then another. They all reported them flying north, but no one had seen them in the very far north. The inference, to my mind, was that they came from somewhere in the "blind spot." I followed there on a hunch, and saw the great new raw hole in the ground. Then I saw the inner world of our world, and the

rocs, and was sure that I had their lair. Whether it would do me any good or not I could not tell. Getting in was easy enough, but getting out would be another story. Somehow I escaped observation as I sped along, keeping as much in the shadows of the rock roof as possible. Below was a scene that was indeed of another world. The rocs were about their domestic concerns. Several were sitting on their eggs, just like hens. One rose from them in my vision, and disclosed the cream-colored globes, which seemed to be about ten feet through. Another had her brood of six chicks, and had torn some animal to pieces for their food. There were no crops, in fact no sign of manual activity, which seemed strange for such intelligent beings. I have come to the same conclusion as Fowler, that they have developed their minds instead of their ability to do things. Absence of competition has obviated the necessity of mechanical inventions. Men have always had to fight; these rocs never. But, like the most prosperous of men, when the reason for fighting came they were formidable opponents.

Soon I saw the gathering that I afterward found was giving a mind-catechism to Fowler. There was no seeing him, it may well be imagined, but my business was to find out what I could, and do all the damage possible. It was a fine chance for my bombs, and I threw them. When, as he told, I picked him up, we made up our minds that we had done a day's work, and I circled and set out for the entrance. The birds, few of whom had been killed or injured, followed in a great flock. My plane could make two hundred miles an hour, but they had the wings of us. The entrance was only a few miles away, and we made it before they caught up. The short November day was coming to an end, and in darkness we could escape them—if we could only keep away until darkness. It was now I began to realize how keen were the brains

and how perfect the thought co-ordination of my opponents. Without having talked it over with Fowler I came to the same independent conclusion, that they could read each others' minds, not merely instantaneously, but by developing the thought together; and ours more slowly, but surely so far as what we were considering came within the reach of their knowledge.

When we got out in the upper world they began to use tactics. They separated into four bodies in front, diamond shape, tailing out in the rear into diamonds of the same four, but each fewer in number and closer together. It was a funnel that would close over my plane and envelop it—the air variety of the wild goose formation used by German "No Man's Land" raiders. They wanted to capture us alive, and hold us for examination, like a police magistrate.

It looked as though they would be able to do it. They knew just what was in my mind at every turn I made, and were fast closing in. Luckily, the night also closing in, I had only half of Wellington's wish at Waterloo, that night might come. There was no Blücher for me, as in the great captain's prayer that "night or Blücher would come."

They almost had me as the dusk settled, and then I played my last card. Those great minds could divine my intentions, but could not act on them unless they understood what they meant. A turn, a tailspin, a dive, were within their ken, and they followed them perfectly, but knowledge of geometrical planes, not the flying kind, but the intangible variety of two dimensions, length and breadth, was my specialty. I had worked out formulæ for shifting an airplane from one geometrical plane to another in a way that, as I have before said, had brought discomfiture on several German aeronauts that had attempted to follow my gyrations. As a flyer by the usual rules I was mediocre but

when I used my own methods, worked out in many sheets of x , y , etc., I could puzzle the best of them. A roc might learn those methods, but could not divine them. As my last hope I began my ritual, counting, and working my controls in unison. As I had guessed, it was too much even for those opponents. Swoops, dives, turns, each on a different geometrical plane, followed each other rapidly. Fowler said that his head was completely turned. Mine would have been if I had not been too busy. The roc formation was completely broken up, and I was able to dart my plane through a large opening left between several diamonds, members of which had actually collided in their confusion. My formulæ had got them off their balance. It was dark and there was no enemy in sight. We were free to fly to Winnipeg, the allied base.

On our way there, Fowler and I pooled our observations, and made deductions. Our conclusions were exactly the same, and particularly clear about the rocs' ability to read minds.

"Did you notice," I said, "how they worked together? There is perfect unity of action."

"Like pigeons," was his comment.

"Exactly. It is a development of the way pigeons fly. You have noticed how they turn, soar, dive, come together, spread out fan-shape, and huddle. In all these movements by pigeons there is no response to orders. No orders are given, you may see. If there were there would be a hesitation, a definite action, instead of the simultaneous movements that do occur. Think of a perfectly drilled body of troops on a parade ground. They are on the alert for their orders. When they receive them they carry them out exactly, but there is an interval, a perceptible one. The movement is a response. With pigeons it is not a response, but unity of purpose itself. The rocs work in this same way, but have developed it so that instead of the few simple

unities of the pigeon they can do incalculable numbers of things together without formal consultation. They have been living in that inside world of theirs, and looking out of the peep-holes much as we look out at the stars, and probably with as little knowledge and as much wild speculation and especially denial as we indulge about the heavens above us. That earthquake opened up the outside world to them, and it is very much as though the heavens became suddenly accessible to us. They came out to see things."

"Yes," replied Fowler, "and they are seeing things, and learning. We too. And the animals in our part of the earth—I wonder if they will learn that their two-legged world masters are in trouble. Well, they are in the same boat with us. We eat them, but so do the rocs, and it is very little to an ox who preys on him."

MY reconnoitering raid and its results caused a very uncomfortable feeling in the breasts of the human race. There was an uneasiness abroad, an idea that possibly man was threatened in what he had never even considered his citadel, but merely his dwelling, needing no protection.

In foreign countries very kind things began to be said about "our threatened American brothers" in newspapers and parliaments where comment had not always been so sympathetic. A common danger began to draw the world together. And the raids continued. Men and animals disappeared, some of them in sight, some of them without being seen to go.

The next encounter was even more discouraging. Lieutenant Camillo Perelli, second to fight and fall, had profited by the experience of Fowler. When he sighted a roc at Buffalo Lick, Minnesota, where he was stationed, he did not take off at once and under him, as his prede-

cessor had done. Waiting until the quarry had gone away some distance, he spiraled up about ten thousand feet, and then suddenly shot toward him from behind. He never could tell his own story, but observers described what happened.

"When I saw Perelli come after that bird like a streak of lightning," said old Andrew Peterson, a neighboring farmer, "I said to myself, that Eye-talian knows his business. He'll pepper him good and plenty."

He did know his business, but his tools were not good enough. He opened fire at about five hundred yards, but nothing happened. Closer and closer, and still nothing happened, except that the great roc began to soar. There were no flying feathers, no fluttering wings, no staggering fall, as had been expected.

"Is it possible that he is not hitting?" asked the onlookers. "Hardly so. He is a practised machine-gunner, and the mark is bigger than a barn, let alone a barn door."

If he was hitting, as seemed probable by the roc's change of direction, he was not hurting him, much less frightening him; for the hunted became the hunter, circled up, swooped, and knocked Perelli and his plane out of all balance to the ground. Plainly the machine-gun bullets did not wound. It was important to learn why.

The problem had now become much more difficult. It was bad enough when the rocs merely outflew the aviators. Much worse when the machine-gun, the only handy weapon, was not powerful enough. The situation was very much as if a punitive expedition against African savages had been whipped on equal terms. One thing stood out as essential. We must get a dead roc. We must know how they were built, and what was the protective element that would turn fifty-caliber machine-gun bullets at two hundred yards.

All this I told Eddie Hartshorn, one of America's best flyers in the war. He had dropped in at A. R. C. (anti-roc-headquarters) to offer his services.

"I'll get one," he said. "I can get to one, anyway. And I'll make sure of him."

"How?"

"Ram him."

I am glad to say that I was not such a fool as to make the banal answer, "You won't come back." He could hardly have expected to do that.

Hartshorn's offer was accepted, and he was provided with the largest and heaviest plane in the country. He took it to the most likely point, but made the pertinent comment, "Rocs do not fly to order. I'll bet some one will beat me to this."

Someone did. As soon as the hundreds of flyers heard of his idea each one telephoned to A. R. C., "There is no copyright on Hartshorn's scheme. I'm going to try it if I can." That is, everyone but one. It never occurred to Lieutenant Roy Anderson, son of General C. P. Anderson, U. S. Army, who was the scion of a line of soldiers that had served in every war of the republic, that he should volunteer. That went without saying to him.

He sighted the roc, went up after it in the way that poor Perelli had shown safe, and hit him at a speed of a hundred and seventy-five miles an hour.

This time the man scored. The great roc came fluttering and twisting to the ground, just like any little bird that has been shot. He was not dead, nor helpless by any means, but could not take the air again nor get on his feet. There he lay, thrashing and screaming, still a formidable object.

He had fallen near Springfield, Illinois, and the whole state started for the scene at once. Autos by the thousands, planes by the hundred.

jammed the roads and made the air unsafe. One intelligent spectator suggested keeping him alive and exhibiting him at five dollars a person.

"You're the kind of guy that would try to bag the Miami hurricane and run your windmill with it," commented the local policeman, who was first on the scene.

Everyone who had a shotgun, a revolver, or rifle brought it and emptied it at the fallen enemy. The effect was about the same as firing a pea-shooter at an elephant. A siege battery of artillery was started from Fort Sheridan. It was not needed, however, as a local well-digger blew the life out of the roc with dynamite. Before he did it there was an interruption. The well-digger had come as near as he dared, when the cry came: "Hold on, let me get away first." It was from Lieutenant Anderson, who had miraculously escaped. When the plane hit its target, he had taken the precaution to unstrap himself from his seat. He was catapulted onto the roc's back, where he landed in a mass of feathers.

It was not a soft bed, he at once found out. What looked like feathers were heavy, wire-like pendants, resembling so much steel wool. They formed a mass at least twelve inches thick, and as hard as iron. Their edges were sharp, and cut like knives. Anderson was a sight. His aviator's suit and gloves had saved him from being cut to pieces, but the feathers had gone right through them in many places, and slashed him all over his body. His face, unprotected, had been cut so that he had almost lost semblance of a human being.

"No wonder bullets can not hurt these birds," commented some officers who had reached the scene in planes. "Why, a down pillow will stop a shot from a revolver. It would take some missile to go through that mess."

THE United States Army had killed its first assailant in this novel war. It was now its business to find out what he was like. Soldiers and scientists took the fallen foe to pieces and made a thorough examination. It was not an easy job. "Like pulling a nest of knives to pieces," was the comment of one. "One false move, and you are slashed."

The publicity department of the army, now fully mobilized, issued a non-technical description in the form of a regular war bulletin. "The so-called roc is a bird, with reptilian traits. It is six hundred feet in spread of wing. Length of body, one hundred and seventy-five feet. It has five talons on each foot, twelve feet long and eighteen inches thick at the base. The bill is twenty feet long, and two feet through its substance in the thickest part. Feathers of tail, ninety feet. Eight inches through. The body is covered with short feathers, forming an armor impenetrable to anything but high explosives, or armor-piercing shells. Stomach contained the remains of several cattle, horses, and men. There was also much half-digested grain. Sex, female. Six partly formed eggs. Dissection was very difficult. Feathers, bill, etc., were so hard that only metal-working tools could be used."

We had now a fair idea of what we had to fight. The general public was much reassured. They were just big birds, after all. Artillery and bombs for them. See how quickly dynamite killed the one that had fallen.

I did not share the optimism. As I turned away from the scene, where I had been present as an observer for the general staff, I thought of the size, agility and resisting power of our foes. Above all, I considered what had not been thought worth while to put in the bulletin—the

great size and deep convolutions of the brain.

"We have seen that these birds can learn," I pondered. "What will they learn next? Our standard is what we call human intelligence. They are outside of this category. They have an intelligence of their own."

A council of war was called to determine the best way to fight the invaders in the light of our new knowledge.

"It is all very well to speak of artillery and dynamite," said one old general, "but we must get said artillery and dynamite on the ground. They do not come where we want them, nor wait for us to get to work. I have seen enough of the futility of anti-aircraft guns to know how difficult it will be to shoot them down." There was general agreement to this.

The chief of staff spoke: "I am afraid that the only thing for us to do is to keep on ramming them, as Anderson did. It will be a plane and a life for a roc, as of course we all recognize that Anderson's escape was a lucky accident. In general, the aviator will die with his victim. Gentlemen, we must carry on as he started. There will be plenty of volunteers. It really is our only chance."

The assent to this was almost as unanimous. I was the only exception. "Gentlemen," I said, "these rocs can learn. They will learn every time. The way to beat them is to devise an offensive that they can not meet. We hardly realize what a tremendous proposition we are up against. Why, their size and power are outside all our ideas. And the food they consume! Have you noticed that they have not carried away a child yet? Too small. I do not think they take a man unless they see him from an angle that gives an impression of size from his height.

"We must beat them at once. If we do not, they will see that we are living in a mechanical age and start one themselves. If they are holding more than even with their naked wings, beaks, and talons, what will they do if they start to make implements of war? They have the brains, but have never needed to live anything but the simple life.

"Think what they have done! I could plainly see that the big gash in the earth through which I entered their world has just been made by an earthquake. There inside they have been living. As Fowler and I have reported, they live off the meat of animals that are large to us but small and inoffensive to them. When they want them they strike them down with a blow. They know nothing about fighting, because they have never had to fight. The earthquake came, the earth opened above them, and they flew out. They encountered the most highly mechanized civilization in the world, with a people skilled in the arts of war. Yet so far they have beaten us almost every time.

"War! Why, it can be their game if they are not quickly checked. Look at my experience! The flying funnel which they improvised in their short pursuit. They wanted to catch me alive and my plane uninjured. A most difficult problem of warfare. If I had not had my geometrical maneuvers to fall back on I should now have been undergoing a mental examination in Rocland.

"The first thing for us to do is to mass our artillery and planes. The Middle West is really hostile country now. We are garrisoning it. It is not military practise to scatter garrisons in a hostile country unless it has been subdued. We should mobilize, and try to make some attacks. We shall hear from the rocs very soon, I am sure. That is, in a military way. We constantly, of course, hear of their raids on the defenseless

inhabitants. You may be sure that they will beat our ramming game."

My views provoked general dissent. The meeting was about to break up, and orders were to be sent out to ram every roe seen, when the telephone rang. As lowest in rank, I answered it. The news was bad. "Wait a minute, gentlemen," I said. "This is important."

What I heard was this: A girl's voice on the long distance. "Is this General Staff? I am Alice Chase, speaking from my home on my father's farm in Wade Crossing, South Dakota. I am giving a message from Captain James McCarthy, United States Army. He is badly wounded, and in the room with my mother holding him. He was just brought down with his plane by a roe. He says, 'Ramming won't work. Those birds can meet it without trouble. I got a good start after one, came close and he stooped, rose behind me, and sent me down. Remember, I made no mistakes, but I had no chance. Neither will anyone else who tries that line.'—Yes, mamma, I hear you.—My mother tells me that that poor soldier has just died in her arms. Oh, dear!"

THE chief of staff, when in France, had been nicknamed "Old Switcher." A judgment, to him, was something to revise. He lived up to his old reputation in the present emergency.

"Well, Latham," came his clear tones before I had fairly dropped the instrument. "it is plain that the ramming plan has failed. You have a plan, I know, or you would never have condemned that one. What is your idea?"

"Gentlemen," I replied, "I have suggested massing our forces. That, you will understand, is not a plan. It is merely to put them into position to carry out a plan.

"What we should do is to concentrate our principal mass of planes

in overwhelming numbers. The principle is the old one of boys chasing squirrels. One squirrel can always keep on the side of a tree away from one boy. Usually a squirrel can elude two boys in the same fashion. But when three boys concentrate on one squirrel, he loses count. His faculties do not co-ordinate sufficiently to keep track of the three at once. And they get him in plain view and shoot him. That is what we should do to the roes. Confuse them by numbers and they will fall an easy prey to bombs."

"Very good in theory," was the remark of the chief of aviation. "But you are proposing to use a large number of planes in a limited area. How are you going to keep them from ramming each other? How will they perform intricate and unexpected maneuvers in unison? How will they get orders? Will not every man be on his own?"

"My solution of this problem is one that I have hesitated to make known," I replied. "The fact is that I can run them myself. I propose to follow the force flying low in a heavily camouflaged machine. It will have an operator, a radio transmitting apparatus, and a large switchboard, which I shall work. Every plane will have a receiving outfit, with ear muffs on the aviator.

"The planes will be organized in squadrons, each machine of which will be in tune with the same plug on my board. All orders will be given by squadrons, which will operate as a unit under my orders. Co-ordinating their work will be a terrible strain on my brain, but I am confident that I can do it. I have made a special study of sky angles and their relation to planes (geometrical planes, you will understand). They are the foundation of all airplane maneuvering."

"I can indorse what Latham says about airplanes and air angles," broke in the assistant chief of staff,

under whom I had served abroad. "I once saw him save the airplane he drove by manipulating it in different planes of air until he made three German aviators dizzy."

By a unanimous vote I was given charge of the battle formations that were to combat the rocs in their own element. I at once began to drill them. The work was very complicated, even though I had it all my own way, in the absence of the enemy. Neither I nor anyone else had commanded and maneuvered an air army, and new problems arose at every moment.

Meantime the emergency had brought about one gratifying result. The human race had solidified against the foe. It was very plain that though the United States was the present sufferer, it was so only because its turn had come first. The rocs, everyone knew, would cross oceans without difficulty.

Accordingly offers of assistance poured in. England and France, without preliminaries, shipped the great air fleets they had gathered to fight men, to save humanity. President Von Hindenburg of Germany bluntly commented, "If the French and English can send their war planes, we can give our passenger machines." The many planes forming Germany's network of air routes were thereupon put upon Atlantic liners, to join her former foes. All the great war aviators from all countries volunteered for service, and swarmed to America. It was noted that the former foes were more chummy than those who had fought together. Frenchmen teamed up with Germans and Germans with Englishmen. "Sure," said an English ace, "why shouldn't we? We didn't bore each other so much." Soviet Russia sent a large contingent.

The foreigners readily accepted my idea of a central direction, and started drilling at once.

MY GREAT need from the first was for someone who could quickly make intricate mathematical computations. The mass of such work was very great. Many able computers were available for the ground work, but none was competent to dispose of a problem when fast figuring was necessary. The need was fortunately and effectively supplied in unexpected fashion.

The chief of staff called up, saying, "I'm sending you a mathematical wizard. We have been trying him on everything from calculus to multiplication, and he can do anything. He will be all right if you can keep the girls away from him. Some sheik! Wait for Lieutenant Arthur Andrews."

The "sheik" arrived in a few minutes, and proved just what I wanted. The caution about the girls was needed. A party of rather haughty Red Cross nurses of high social standing were visiting the camp on business. All the lady-killers of whatever rank had been repulsed with a total loss. Someone was remarking that it was the coldest day in years, when Andrews hove in sight. The thermometer went up like a shot. Some of the nurses gurgled, and some giggled. Mr. Andrews, on the contrary, was not in the least interested. He never looked at the charmers, but came directly to my office, and reported.

He was all that the chief had represented, and more. "You are said to be a quick worker at problems," I informed him. "That is all very well, but what I need is someone who is good at averages. My typical case is like this: one hundred and sixty planes are flying at a given height and interval. They sight ten rocs at irregular distances, which we compute at once. Where will they meet? I'm going to set you that to work as quickly as possible."

In solving that problem in his head, by the law of averages, and closely

approximating the slow mathematical computation, he solved the other, of who was to be my assistant, my other self.

The first air division soon began to take a shape as a unit. It was composed of American and foreign flyers, most of them with reputations gained in the late unpleasantness. On February 22nd, George Washington's birthday, it first came in contact with the enemy. Two rocs were sighted near Fort Worth, Texas, while the division was maneuvering.

My squirrel idea was correct. Forty planes circling above, with thirty behind, in front, and on each side, bewildered the great birds. They were smartly bombed, and blown to pieces with no loss on our side. A victory, but there were many rocs. And they had never failed to learn from each setback. We kept on training. In April there were six thousand plane units in service, roughly one-half American, the rest foreign. I commanded corps, armies, and army groups of aerial units.

My assistant, now Captain Andrews, was invaluable. We soon came to be on most friendly terms. Some of his ways were rather queer. One day I found it necessary to explain to him that the duties of a military secretary were not exactly universal.

"Say, Andrews, a secretary is supposed to take care of his chief's money, to stall off girls ('I haven't seen any girls bothering you,' he murmured) and to do most of his work. But he is not expected to censor his toothbrushes. You are responsible for this new one, are you not? Nobody but a wife can throw away a man's toothbrush. And although you bully your superior officer like a wife, you are obviously not that."

"I should hope not!" came in a tone that struck me as very curious. It was not until Andrews blushed when a British aviator asked him if he was related to his old friend, Arthur Andrews, that I suspected anything. He denied any relation-

ship, which was true enough. True because, according to his papers, he was Lieutenant Andrews, himself, once of the British Army. Andrews had come to America after the war, become naturalized, and joined the reserves as a lieutenant. Another of my problems to work out.

Whatever its solution, it did not require action. Arthur was brave, wonderfully efficient, and his work had become a necessary complement of my own. It was safe enough to keep him, as the spy problem did not exist in this war. Whatever his reasons for taking another man's name, they were obviously patriotic. And I liked him.

The fact was, that Arthur Andrews was Alice Chase. The real Andrews had hastily put on his uniform when Captain McCarthy went after a roc, as I have already told. There had been no record of his presence. When the plane crashed, he was instantly killed, and Miss Chase did not discover his body until she had reported McCarthy's death. Alice was the star mathematician at the University of Minnesota. She had made up her mind that she could serve her country in its emergency; so she put on Andrews' uniform, and took his name.

I very soon began to suspect that there was something different about Andrews. It was very pleasant to sit close to "him" in the course of business. That could come from friendship. But one day when I found that I liked it when "he" stood back of me and happened to breathe on my neck, I had a revelation. The so-called Andrews was a girl.

"Well, she is such an essential helper that it is my duty to my country to keep her. I hope she is not married. On the whole, I don't think so. That toothbrush incident would never have happened unless the young lady meant to take possession."

Meantime, there were sterner things to confront. The rocs were raiding every day, and gradually the radius of their activities was becom-

ing enlarged. They invaded the East, the Pacific Coast, and Mexico. Our concentrated forces seldom came in contact with them. We really wished no indecisive actions. They were too much for us unless we were in force.

I KEPT drilling all day and working out angles and the relations of air-planes and geometrical plane levels at night. It was an inspiring sight to view the maneuvers of a plane army, and to know that I had it under the control of my voice.

"Section 16, Second Division, drop to four thousand feet," I would command. And twenty planes obeyed like one. "Sections 4, 7, 12, First Division, raise speed to one hundred twenty." Sixty planes shot out in front of their companions who were doing one hundred miles an hour. "Second Division, thirty degrees east." An argosy swung.

We were soon to be challenged. A perfect April morning over the Kansas prairies. A grand maneuver of the Second Aerial Army before the President! And a delegation of distinguished foreign soldiers and statesmen. Marshal Petain and General Von Seeckt, first commander of the German Reichswehr, were to criticize.

"Not our kind of fighting at all," they had said, rather doubtful of much ability to help. "We are familiar enough with the use of planes as auxiliaries, but as first and second lines—well, we are not used to it." They reveled, however, in my mathematical calculations, and were interested in hearing Andrews' replies to posers.

Fighting seemed a long distance away as we climbed into our direction plane, which had been specially camouflaged. It was above all things essential that my plane keep in action. I was the sole directing force. I had attempted to run the air army as one on land is directed, by a staff and subordinates. The attempt had proved a complete failure. Orders were mis-

interpreted. Others reached the wrong units. Several planes had collided, with casualties. One-man direction was the only way, in the present status of planes and radio, that an air army could be run. So I must take no chances. The duty of others might be to die for their country. I must, above all, live for her.

The one thousand planes of the World's Second Army took the air. Did you ever see a flock of pigeons turn, twist, rise, bend, fall, change direction as though directed by a single mind? That had been my ideal of direction. I had always kept that flock in mind, with, of course, the difference that my pigeons must be far apart. In some degree the ideal had been reached. It was a beautiful sight when the planes soared, fluttered, turned, changed distance, spread out, came together.

At the same instant, everyone seemed to espy the enemy. Shouts from the ground, signals from planes, booming of guns, reached my ears. It was an attack in force. With the intelligence that was all their own, the great birds had organized an air army. Ninety-eight were counted in the raid. They, too, could maneuver. No flock of pigeons ever worked together better.

At the first swoop, I saw sixty planes crash. This was my rough guess, from the vacancies I saw in the battle formation. Really, fifty-five came down. It was an unexpected raid, but that was what I had prepared against. This was where my work on geometrical planes was to count. The second World's Air Army, which had been in orderly array on the seven thousand foot level, under my quickly radioed orders, seemed to break up into unrelated units. Some climbed to fifteen thousand feet. From that level they were distributed at thousand foot intervals, down to six thousand feet. Some soared, others dipped. Some swung around in great circles, some in small. The

seeming confusion was what I had counted on to puzzle our opponents. Maintaining it, and carrying the whole geometrical figure in my head, was a task that taxed my brains to the limit. And it was a figure that had to be constantly changing in all its parts. My practise and thorough preparation, along with a certain native aptitude for visualizing circles, angles, and geometrical planes enabled me to keep my seeming disorder orderly. On the ground below, many observers thought the army was in a panic. Not so the President, and Generals Petain and Von Seeckt. Their cool heads, although they could not follow the whole design, comprehended that a plan was working.

The rocs made another dash, this time at the twelve thousand foot level. The failure to be above all was their undoing. At thirteen, fourteen, and fifteen thousand feet were sections, their planes loaded with bombs. Those near by threw them with their hands. At a greater distance they were discharged from grenade guns. The birds, spreading six hundred feet from wing tip to wing tip, were easy targets. The bombs were so powerful that the feather armament was ripped wherever it was hit.

The slaughter was fearful, and not only among the rocs. In the first place, the planes on various levels were fairly close together. Any bomb that missed had a good chance to bring down a friend. The rocs, too, were busy in defeat. They took heavy toll of their enemies.

Unfortunately a great crowd had gathered to see the maneuver, and the attack was made just above the assemblage. Such bombs as did not hit a roc or a plane exploded when they struck the ground. When the planes crashed, they added to the quota of civilian casualties. And such rocs as were not blown to pieces, but had to come down because of broken wings, slashed and bit everyone in sight.

It may be imagined that I was too much occupied to see much of this. In fact, I was so busy that at the last moment, when all the rocs I could see had been disposed of, I nearly emulated General Desaix at the battle of Marengo by dying in the moment of victory. My secretary, as usual, was on the job and very unwilling that I should become a dead hero.

I had overlooked the last two rocs, but they had not overlooked me. The camouflage had been an efficient protection all the morning. But some freak of the noonday sun must have disclosed it to the last survivors. While I was bringing the army down to earth, they stooped. I heard a cry from Andrews into the transmitter, "Sections 9, 11, Third Division, to two thousand foot level, and bomb." Neither rocs nor sections had far to go. The attackers struck our plane at the same time that three bombs hit them. Down we all came, luckily without smashing the fuselage. We were safe.

We had won the first real battle. Whose would be the final victory? It was a more important question than in the wars of men. With those, even a complete conquest and annexation had meant the absorption of the winner by the loser, as in the case of the Roman Empire and the Norman invasion of England. The roc absorption would be physical. They would eat us.

"Well, anyhow, it will take them some time to become mechanized," wrote one popular commentator. "The Occident has been at it a century and a half, and it took the clever Japs forty years just to copy." We of Mankind's General Staff, now our official title, were not so sure. Soldiers know that there is such a thing as resourcefulness and improvization. We credited the rocs with it.

THERE was a puzzling occurrence a week after the battle. Just two raids, but they picked the largest munition factory in the country for

them. The plant was in the mountains of West Virginia and made airplane bombs for roc battles. A day later an equal number came back and rummaged around.

"We worked in wooden sheds, flimsy affairs, and lots of them," said a woman worker who saw both raids. "That is so that an explosion will not wreck the whole plant. When the rocs came back they smashed the sheds just by their weight. They spent a long time peering around and gathering up tools, and so far as I could make out, raw material. It was very hard for them. The tools are small and made for men and women. The raw material was in steel pigs, bags of saltpeter, boxes of fuses and the like. They seemed to know what they wanted, but they had an awful time getting it away. The tools, boxes, rods, and pigs kept slipping out of their beaks and claws. They left a regular trail behind them, but probably got away with the heft of it."

"Looks like one of the trench raids we used to put over on each other in the late unpleasantness," commented Major Kramer, whose point of view in that conflict had been toward the American forces. Now it was parallel. "Remember, we would raid each others' lines for prisoners and shake them down for information?" We on the staff agreed with him, but the general public thought the raid was merely another one for food and to satisfy curiosity.

"Mankind" was preparing for battle. It would have to be a battle, too. We of the military knew that there would be no short cut. The popular idea was the much dreaded gas. "Cover them with a blanket of it. Send all the planes we can get together loaded with gas bombs, and drop them at a given signal. Every living thing in Roeland will die." This read well, and sounded well in conversation, but Roeland covered about three hundred thousand square miles, and there was not enough gas

in the world to blanket more than a corner of it.

"We shall have to fight it out, plane to roc," said our commander. "Just now it will be against bare claws and beaks, but if we wait too long, they will mechanize themselves, and we shall have no chance. I think we can get ready for our invasion of the North in a couple of months, and that we should make haste even to the point of taking chances. We have nothing but an air force. No other could get near Roeland.

We were left unmolested in our preparations. Whether at night ominous shadows that might have been clouds were roc scouts "thinking in" on our deliberations, as in the old wars men had similarly worked and listened in on enemy wireless and telephone, was matter for conjecture. We really did not know whether the thought transference of our adversaries worked equally well at a distance, or only near by. The general opinion was that distance made for confusion of thought, and that there was need of a certain concentration obtainable only at close quarters. This point has never been cleared up, and it will be impossible ever to tell whether or not there were spies in the air.

SUDDENLY, after two months, there were indications from Alaska of a great enemy offensive, and of the dreaded mechanical kind. On June 10, 1930, the cable from Nome stopped working. Ice or tangled whale was at first supposed to be the reason. When, in addition, the local wireless station did not answer, the world was sure that something had happened to Nome. Ships in the neighborhood also failed to answer wireless messages. Next day there was a glimpse of light. Sergeant Hopkins, of the Canadian Mounted Police, broadcast this message from McFarland Post, a lonely station on the Arctic: "Troopers O'Connor and Jones just died suddenly, seemingly overcome by some kind of gas. I am feeling faint

and think I got a whiff. Am afraid to go near where they are on the shore, about two hundred yards from here. Am going across wind to try and get away from the danger. Hopkins."

Two days later a gas-masked figure in a motorboat turned up at Tyro Point, an American fishing-station on Bering Sea, one hundred and fifty miles from Nome. He was Albert Ludlow, the only survivor of the population of that once flourishing American town. Ludlow told the story of how the city was gassed.

"I had served overseas and always been very careful of gas," he said. "My mask had been a good friend in France, and I packed it along wherever I went for ten years. Luckily for me, too. Two days ago I was in my room looking out of the window at the sun, which was getting a little low, about nine o'clock. The usual summer evening Arctic baseball game was going on in the lots across the street. The center fielder had just started after a fly when he dropped in his tracks, clutched at his throat for a second, and then ceased to move. Then the first baseman dropped in the same way. There was the usual knot of spectators to the right of the home plate in the general direction from center field on through the first baseman's position. Before anyone could run to the aid of the players the spectators began to drop, too, clutching at their throats, and then relaxing.

"My war training served then. Hardly by thought, but more by instinct, I grabbed my mask from my bureau drawer, and put it on. Old as it was, it worked and kept out the gas, thank heaven. It was needed, too. In the few seconds that had elapsed, the gas—of what kind I don't know, nor where it came from—had spread from the one narrow line it had taken first, and was in many sectors. Bound by invisible lines, people were living and dying. They could

not see it, and I heard them yell that they could smell nothing. Up the street one block was full of life, the next of death. People did not know what to do. The death essence was spreading. If they ran, they would probably run into it. If they stayed still, it would come to them. I saw no one else with a gas mask. Some cool individuals saved themselves for a time by running down the lanes of life, keeping as far from where the dead were on each side as possible, and taking a course down wind. Even these were gradually caught as the main body of the gas, of which the lanes of death were the feelers, gradually spread solidly over the city.

"I waited until this happened, and then started down wind with the fleeing citizens. Some were running as fast as they could. Some were on bicycles, some in automobiles, but within half an hour the gas had caught up to them. As I trudged along the coast I first came upon the slow runners, the women, the old and weak. Next the bicyclists, who had fallen from their wheels. Last were the automobiles, whose occupants, as they were overcome, had lost control. Some machines had run out into the waves until their carbureters were flooded; others had smashed against some obstacle, driftwood, or sandbank. One was still running a shaky course in a clear space of beach. All the refugees, afoot, awheel, in motor, were dead. Obviously everyone in the city was dead, too. My job was to get out if I could. I could not wear a gas mask forever. This motorboat was in a cove with someone who had evidently been its owner lying dead where he had been cranking the motor. I started it, and ran down the coast to this settlement. I have worn my gas mask all the time. Until I saw you people alive and unruffled I had no means of knowing whether there was gas in the air or not. Those rocs must have sent it. They certainly learn fast."

THE stories of Ludlow and the Canadian policeman stirred up the gas propagandists. "Suffocate the rocs, or they will suffocate us," was the cry. It was a difficult one to answer, but it was impossible to do. Facts are stubborn things, and there was not enough gas in the possession of the human race. A quick offensive was the only resource.

Mankind was able to muster six thousand planes near enough to Rocland to reach it with gasoline enough for maneuvering. Each was loaded to its limit with high explosive and gas bombs. We did not know how many rocs there were. A mere guess by Fowler and me was that there were fifty thousand grown ones. Our bombs were so powerful that if we could get among them we could make havoc.

The expedition started on July 16th from its Canadian base. I headed the advance guard, composed of squadrons by nationality. "No sign of rocs," I said to my chief of staff. Captain Andrews promoted.

"No, sir, and there hasn't been for weeks," was the reply. "They must have something up their sleeves—I mean wing feathers."

The miles rolled by, and still there were no rocs. We neared their country, but were unopposed.

"No scouts," I said.

"Looks very peculiar," came the answer.

Even when we reached the great depression, with its warmth-giving volcanic pillars, there was the same silence. As we passed the brow of the precipice, ready for action, we were still unopposed. We had been flying high, but now took lower levels for action. As we did so, we saw rocs, plenty of them, but strangely inert. Other animals, too, megatheriums, mastodons, mammoths, rhinoceroses, all the abundant fauna that the birds had bred just as we do cattle, to eat, were scattered over the ground. They, too, were all silent.

"Dead!" I yelled into the wireless

phone. "Dead!" shrieked the pilots of six thousand planes, each into his phone.

Who or what had done our work for us?

It plainly was safe to land. Nothing in Rocland could hurt us now. The air was pure, but the attitudes of the dead suggested gassing.

The land animals lay in all attitudes, some of them pitched on their sides, some with their necks twisted under them, those of the elephant family on all four knees. The mother rocs had stuck to their eggs or young, as they were sitting or brooding. Their forms towered up, not unlike giant statues of resting eagles, their heads settled in on their breasts. The eggs or young could be dimly seen under the mother that had unavailingly attempted to protect them with her life. Many of the other rocs had similarly been overcome on the ground, or at low altitudes, where their buoyancy had permitted the inert body to sink to the earth without damage. Others had been flying high when the death wisp caught them. These had fallen thousands of feet and were horribly smashed.

A surgeon performed a short autopsy on a dead mastodon. It was a small one, but at that he had to have the help of a couple of company butchers. He reported that it had been overcome by some kind of gas.

OUR expedition pressed on in regular flying order, encountering nothing but the dead. About three hundred miles from the boundary of the country of the rocs, I descried a prostrate form that was smaller than the rest. "A man," was my guess. A look through the field glasses confirmed it. We were now probably in a position to find out what had happened. "Dead men tell no tales" is a proverb that is useful only to thieves. The body was lying on its back, about five hundred yards from a ragged hole in the ground that was,

I judged, about two hundred yards across.

Just as I had hoped, this man did tell his tale—not by word of mouth, but by a diary he had kept until the instant of death. The book, of the pocket variety, was just where it had dropped from his left hand. On the cover was tooled, “James P. Black, Hardy Springs, West Virginia.” January 1st to April 15th, 1930, told the story of the organization of the munition plant that had been raided by the rocs. Black was the general manager. He had been appointed in the late fall, strictly on his merits as a master of both theory and practise in the manufacture of bombs. April 15th was the date of the roc raid on the arsenal. He made his entry for that day on the sixteenth, when a captive.

April 15. I am making this entry a day late. Yesterday I was not too busy but much too helpless to write. At nine o'clock in the morning my chauffeur was driving me around the plant in an open car when something swooped. I was grabbed, not very roughly, but in a viselike grip, and carried off. I saw the chauffeur on the ground with a rip that had almost cut him in two. The roc (it was easy to guess that) snatched several workers and flew away with us. I thought of Fowler, who had been carried away, and afterward rescued, and wondered if his luck would be mine. Not very likely. We landed last night as the sun was low. The date and the location of Roeland made me guess that it was about nine o'clock, which I confirmed from my watch, uninjured. It was a long hard flight for us and the rocs as well. I was so stiff that I could hardly move for a while. Our captor, when he dropped us, tried to hop away, but fell over on his side, unable to keep his feet. Just like those of smaller beings, they had gone to sleep from the cramped position in holding on to us. We were at once surrounded at a distance of a

hundred feet (they were too big to form a closer circle) by several birds, who looked as though they were there for business and not for curiosity. I soon found that I was right. My thought was, “They are smart, but not smart enough. They raided the bomb factory, and got the super and some good workmen, all right. But we can do nothing with our bare hands and with no raw material. It looks as though there were saltpeter and other minerals here, at that.” The rocs looked at each other, and all flew away at once, leaving only two guards. What a fool I had been! I had forgotten Fowler's tale of thought transference, and had been given the third degree without any trouble. I had betrayed the human race. Unpleasant thought, but I was so tired that I soon went to sleep.

April 16. They have herded up the captives. A couple of hundred, and a bunch of the best workmen I had. We are going to make bombs or die, I guess. Just ate megatherium meat. One of the boys had seen a reproduction of a fossil once in a museum, and recognized it when a roc drove it up, waddling along on its piano legs. The roc gave it a contemptuous cuff, which ripped off its six-foot head, and left it for us. There was plenty of brush for a fire, and of course most of the boys had matches. We had a good meal soon. There is always someone who can cook well in a bunch of first class mechanics.

April 17. Just as I guessed. I have betrayed the human race. Those rocs beat it as soon as I had those fool thoughts about being unable to do anything with bare hands, and raided the plant again for tools and material. I am afraid I shall have to save my life by working for the enemy. So will the rest. One thing is sure. Whatever I do must be on impulse. I must not think. I thought once and see what happened! I may be able to do some good, if I keep my mind free from plans.

April 18. We are at work, making bombs for our enemies. I have no excuse. I should hate to copy Talleyrand's answer to the question what he did during the Reign of Terror: "I lived."

April 19. "This is a stock country," said a Texas cowboy last night. "And they know how to raise it. All fat and in fine condition." "That is right," remarked Ignatieff, once of Russia. "These rocs have improved the breeds. I have seen the mammoths in the museum at Leningrad. They are not half so big as these twenty-five-foot-high brutes with sides squared out, no hollows, and lots of meat. Look at their tusks, too. Almost bred out. I have not seen a pair more than three feet long, and two-thirds have no tusks at all. Why, the mammoths and mastodons in museums have them sticking out six or eight feet! No good at all for eating, so they have bred them away."

April 20. Wandered away three or four miles from our camp, which is in a cave near one of the chimneys that heat up the place. No restrictions after I had done a fair day's work. There are sentinels all around, and they can see much farther than I could go in a day. Came upon something peculiar. A piece of ground that looked like geyser land. I could not get very close, because there was a roc sentinel. He was a couple of hundred yards away himself, and would not let me go any closer. Thought it was some secret at first, and then noticed that, near a small, low mound of stones, there were several dead animals. I at once saw why the sentinel was keeping me away. He was not guarding a secret, but protecting us. Some kind of gas was evidently escaping, and it was fatal to life. Anything to do about it? I must not think! I must not plan! Remember what happened before when I thought! I betrayed my kind! Heaven grant that these birds can only penetrate the conscious mind.

If they can enter my sub-conscious thoughts, I am helpless! I can not control those.

April 21-30. I have been too busy to make any entries, and must lump them for the last days of this month. Wish I was home! We are working away at bombs, and shall have some ready soon. Nice job we are doing. These birds will be able to use them as well as we can. They speak our language; that is, the universal language of thought. It needs no words or translation. They understand our methods and have helped us mine and do heavy work, the kind for which power is needed. Power enough in them! Writing of language, they do not seem to have any. Perhaps they had one once, but with their thought-reading have forgotten it. Only the young ones make a noise. And they certainly make enough. I have made remarks about the lack of discipline in American families, but our children are angelic compared to those of the rocs. From the moment they come out of their ten-foot eggs they are up to something. They are strong enough in a few days to kill any animal in the country, and, but for sentinels everywhere, they would. The old ones have their work cut out for them. Strange to say, however, they seem to get over their youthful cussedness. I have not seen any row among the grown-ups. What a lovely fight two of them would put up if they did get in an argument! Talk about roosters! Six hundred feet spread of wings. How the feathers would fly!

This is a civilization of intellect only. These birds, with their wonderful brains, live on the ground. They have no fires, no improvements whatever. They have built nothing, developed nothing, except the breed of food animals. Yet they have their thoughts, their customs of life, take wives and husbands, and live peaceably and without work. The hoboes' dream, one would say, but they are

not hoboes. They have learned to control every instinct, to think, but not to do.

Not my idea at all. I like to work, to be creating and changing things. My characteristics can be judged by my clothes, that is, if you know the Secret. They are a little idea of the secretary of War, given when he put me in charge of the works at \$75,000 a year!

"Wear light-colored sporty clothes, and if I catch you with them dirty I shall know that you have been putting your hands into the work and fire you. You are the big boss, and your job is to keep your hands off and your eyes on." So I still have on my "working-clothes"—a light gray hat, a pair of sport shoes, a white shirt, and a gray suit. They are dirty now, and I have my hands in the work.

May 1. All these roc sentries over animals, gas holes, children, and us must rather welcome the work. I realized this from a remark of a rather tough fuse-tester who is not particularly fond of keeping busy: "Talk about slow places! This is deader than any tank town I was ever in. You say that these birds have probably been here for many thousands of years, doing nothing but sit around and think? They have had things all their own way, and never had to work? Wotta life! Just watchin' the animals. This war must be a relief to them."

May 2. I have found out why they are so anxious to get on the earth. This country is going to freeze up, and they must leave. Until the crust about them fell in, doubtless burying many, it was warm enough, but the chimneys, or dying volcanoes, had been going fast. I noticed as I was being carried in, that the vegetation around the borders was dying, evidently bitten by frosts. There is a chimney a few miles from our camp that has just gone out. In a year or so this whole country will be arctic. All the life is huddling closer and

closer to the center, near which we are. It is just a population and stock center at that. No buildings, nothing made by living beings, except our rude bomb plant, the first mechanical effort in this land of pure intellectuality.

May 3-30. Still busy bomb-making. There has been a failure. Some misunderstanding about where tests should be held, and as a result a premature explosion. Six men were killed, and one roc lost a foot. They understand now that there must be a clear open space for tests.

June 5. A large tract of land in the neighborhood of the gas hole has been selected for the tests. We are transporting a number of bombs there, and expect to hold the tests soon. The ground around there is somewhat hollow under foot, but that will not stop the tests. I almost thought!

June 8. We hold the tests today. A number of bombs are scattered over several hundred yards near the gas hole, and we shall learn a lot about our bombs and their effects.

My business is to make and test the bombs, and not to think about effects. All is ready. My detonator is connected to a whole string of bombs. Hurrah! I did not think!

HERE the diary ended abruptly. The heroic Black had detonated his charges, and died. The manner of his death, however, was different from the expectation that he must have entertained in his sub-conscious mind. The result was much better than he had had a right to expect. What such a trained engineer as he was would have forecast was a cataclysmic explosion of the gases that were underneath the neighborhood. This would have destroyed all life for many miles around, and made a much larger hole in the ground than the one we found, which was only about two hundred yards across. The destruction would, however, have been only a calamity to the rocs. It would not have extin-

guished life in more than a few hundred square miles, and Rocland was larger than Texas. Most of its formidable population would have been free and well, and we should have had to fight them.

What happened was this: The gas was deadly, but, possibly something like helium, not explosive. All the material destruction was caused by the powerful, well-made bombs, which ripped a great hole in the ground. The gas streamed out, with, we may well imagine, the force of a moderate tornado. It quickly covered all of Rocland, and, as we saw, killed everything in that territory, which is, by now, almost a part of the conventional arctic regions.

The gassing of Nome and the Canadian post were due to clouds carried in their direction by a freak of the wind. The rest of the gas has been lost in the atmosphere of the earth. It was just a pocket below the land of the rocs, and all of it came out at once, as proved by the pure atmosphere we found a few days later.

The heroic James P. Black was

buried in Arlington, and his diary is in the Congressional Library.

As for me, I was now free to take up my private concerns and wasted no time in going about them. The first concern was with my chief of staff.

"Captain Andrews, where is your Adam's apple?" I asked, pointing at a very pretty neck.

"I am not the kind of a person that has an Adam's apple," was the quick answer. "And my name is not Captain Andrews any more; it is Alice Chase."

"Well, Alice Chase, will you change your name again, permanently and quickly?" was what I considered quite a snappy reply.

"Of course I will. Haven't I been taking care of you for months? Do you think I am going to give up the job?"

So for the first time in the history of the United States Army, two of its officers married each other. The newspaper photographers were much disgruntled because Alice wore a gown and veil instead of her uniform.

"So commonplace," they said.

