



JULES VERNE'S TOMBSTONE AT ALIENS  
PORTRAYING HIS "SERIALS"

# AMAZING STORIES

May, 1930  
Vol. 5, No. 2

Experimenter Publications, Inc.  
B. A. Mackinnon, Pres. H. K. Fly, Vice Pres. and Treas.

## In Our Next Issue:

**PIRACY PREFERRED**, by John W. Campbell, Jr. In this story, as in his previous ones, our young author offers us a rare combination of accurate science with excellently written fiction—which makes a perfect **AMAZING STORY**. This time, Mr. Campbell looks into the future of aviation—a subject which at the present time compels a universal interest.

**THE NON-GRAVITATIONAL VORTEX**, by A. Hyatt Verrill. When we discover what gravitation is, scientists will perhaps find it less impossible to annihilate gravity. This is an extraordinary tale, dealing with vortices that develop a strange phenomenon—the local annihilation of gravitation.

**ELEMENT No. 87**, by Ralph Linn. Chemists have determined from various considerations that there can be only 92 original elements in the chemical scale. Only comparatively recently have a goodly number of these been discovered. But there still remain a few about which chemists know little or nothing, and there is no telling what possibilities an undiscovered element might hold. Our author uses this idea in an exceedingly clever bit of scientific fiction.

**THE UNIVERSE WRECKERS**, by Edmond Hamilton. (A Serial in 3 parts) Part II. In this instalment our four travelers experience many dangers with the extraordinary beings of Neptune, which is nearly 3 thousand million miles from the sun, but they learn the source of the power that has caused the increased rotation of the sun, which threatens the life of all the nearer planets in the solar system.

**FLAMINGO**, by Clarence Edward Heller. Much has been said in the daily journals of wonderful robots, the direct successors of the almost historical "steam man" of two generations ago. But think what would happen if not only the servant and the manual worker were replaced by robots—if even our great singers and famous actors were likewise replaced in such manner. Our new author has woven a charming extravaganza of the amusements of the future—not so very far in the future, at that.

## In Our May Issue:

- The Universe Wreckers**  
(A Serial in 3 parts) Part I  
By Edmond Hamilton..... 102  
Illustrated by Wesso
- Synthetic**  
By Charles Cloukey..... 130  
Illustrated by Morey
- Vis Scientiæ**  
(A poem)  
By Miles J. Breuer, M.D..... 139
- The Gimlet**  
By Victor Endersby..... 140  
Illustrated by Morey
- The Noise Killer**  
By A. M. McNeill..... 151  
Illustrated by Morey
- Madness of the Dust**  
By R. F. Storz..... 154  
Illustrated by Wesso
- The Ivy War**  
By David H. Keller, M.D..... 160  
Illustrated by Morey
- What Do You Know?**  
(Science Questionnaire)..... 169
- A Circle of Science**  
By Stanton A. Coblenz..... 170  
Illustrated by Morey
- Through the Veil**  
By Leslie F. Stone..... 174  
Illustrated by DeFaux
- Discussions**..... 181
- "The Pea Vine Mystery" and "The Dead Sailor"**  
By A. L. Hodges..... 182

### Our Cover

This month illustrates a scene from Part I of the story entitled, "The Universe Wreckers," by Edmond Hamilton, in which the four travelers, fitted out in their space-walker suits, are making the necessary repairs to their space-flier, which sustained some damages while going through the asteroid zone on their way to Neptune.

**AMAZING STORIES MONTHLY**. Published at 124-10 Jamaica Avenue, Jamaica, N. Y. Entered as second-class matter at Jamaica, N. Y., under the act of March 3, 1879. Title Registered U. S. Patent Office. Copyright, 1930, by B. F. Lee, N. Y., Ernest August, & J. Wise et al., of Flushing Meadows, Queens, N. Y. Single copies, 25 cents. Subscription price is \$3.50 a year in U. S. and Possessions; \$3.50 a year in Canada and Foreign Countries; single copies, 25 cents. Editorial and Business Offices, 331 Fourth Avenue, New York, N. Y. Publishers are not responsible for ads. lost, although every care is taken for their safety.



*Something flashed in the sun above and ahead of me. I looked up and recognized it as one of the new silent electric planes gleaming silvery white*

# SYNTHETIC

By Charles Cloukey

*Author of "Sub-Satellite," "Paradox," etc.*

**G**RAHAM Greene and the Flaming Atom and I were sitting in comfortable wicker chairs on the sunny porch of Graham's palatial summer residence at Atlantic City. An apparently endless beach and a blue-green ocean dotted with boats and hydroaircraft made up the view from the porch. The time was in the late summer or the very early fall of the year 2000, but I do not remember the exact date.

The young scientist's face held an expression curiously reminiscent of his father, Thornton Greene, who had disappeared from the world of men ten years previous, and of whom no trace had ever been found.

"Von," said Graham Greene to me, "Elmer Calvroon escaped from prison last week."

"How?"

"Attacked a warden to whom he had a superficial resemblance, knocked him cold before the poor fellow could call out, strangled him to keep him quiet, changed clothes with him and had the nerve to walk calmly out. The substitution was discovered in about ten minutes, but Calvroon had disappeared. It's the first successful jail-breaking in seven years. He has cold nerve, Calvroon. He made the change just before the warden was to go to his supper. The prison officials think a plane must have been waiting for him nearby. He's at large now."

Graham Greene was silent, and I knew he was remembering the events of the previous year, when Elmer Calvroon, who was his step-uncle, had tried to kill him. Before Thornton Greene had disappeared he had made a will giving the contents of a certain vault to Graham Greene, or in the case of the latter's death, to Calvroon. At the tenth anniversary of the disappearance of the elder Greene he was considered legally dead. The cold-

*It seems to us that in the not too distant future mechanical men, as we may call them, will pilot airplanes—albeit under the direct supervision of human pilots. There is no reason to doubt the efficiency of a robot in the matter of keeping to a specific course and thus leaving the supervising pilot free to carry on the odds and ends necessary in long-distance flying. When mechanical piloting has become an established fact, there is hardly any limit to the development possible in the field. This author, now well known to our readers, has incorporated some strikingly original ideas, not only in fast and furious airplaning, but on the subject of synthetic men, humanized, as well. "Synthetic" is not only a clever story of scientific interest, it is also extremely thought-provoking.*

Illustrated by  
MOREY

blooded Calvroon, knowing that the vault contained the greatest scientific discovery of Thornton Greene, the secret of synthetic life, had attempted to kill Graham and obtain the secret, for Calvroon also was a scientist. His plan had failed and he had been imprisoned. Graham had inherited his father's fortune and the secret in the vault. With a trusted staff of truly great scientists he had taken possession of the voluminous notes, formulas, and instructions that the elder Greene had left, and was carrying on his father's work in secret. At this time the world in general did not know that Thornton Greene's secret was known to anyone. Graham was not yet ready to disclose the secret to the world.

"I am afraid," said Graham, "that he may make trouble for me. We shall have to take precautions. Elmer Calvroon might be exceptionally dangerous, particularly since he knows that I am now carrying out the identical plans and experiments he had so much wanted to work on. But let's change the subject. Von,

you hold the world's record for the ten-mile straight-away airplane dash, don't you?"

"Yes, he does," said the Flaming Atom, "but he won't hold it long. He captured it last year in a Uaco speedster christened *Nemesis*. He made the ten miles in 59.016 seconds, which is at the rate of about 610 miles per hour. I was second in the American Aviation Company's racer, *Hokushu Katsu*, but my time was I minute 1.03 seconds. But you're going to lose your speed-crown this year, Vonnie. American Aviation has supplied me with a little stream lined beauty that is going to make United Aircraft Company's best efforts look sick."

"Time will tell, Flaming One. Uaco hasn't been asleep, either. Wait 'till you see the *Nemesis VI*."

"Six, Von der Konz? What happened to the *Nemesis II, III, IV, and V?* One year you fly *Nemesis*, and the next year *Nemesis VI!* What's the trouble?"

"The others," I said, "were either discarded or they crashed during the radio-control tests. You may be interested to know that *Nemesis V* made 652 miles per hour before she burst into flames!"

"She wasn't carrying a pilot, my friend. I won't have to make 652 to beat you next month when you fly the *Nemesis VI.*"

"What's the name of the boat American Aircraft has provided you with, Atom?" I asked banteringly. "The *Hokushu Katsu IX*, or what?"

"The *Kanamura Fensu.*"

"I like those quaint old American names your company chooses for its American aircraft," I remarked, "but I hope they never decide to name a plane *Hari-kari.*"

"Wait a minute," said Graham Greene. "You two may be professional rivals, but theoretically at least you're personal friends. Let's change the subject again. Atom, my dear, are we, or are we not going to have Von der Konz here as the best man? Our wedding, you know, is scheduled for just after the races."

"Von der Konz shall be best man, Graham. After I've beaten him in the race I really must do something nice to the poor boy. You're coming to watch me beat him, aren't you?"

"I'll have many important experiments in progress," said Graham, "but I'll take time off, sweetheart. I couldn't miss it. It's much more important than artificial chromatin or synthetic cytoplasm. What colors will your plane be?"

"Gray and green. I was thinking of you when I chose them, Graham Greene."

"Very sentimental," I interrupted, "but you were wrong, Atom. How can you expect to win in a plane that doesn't go with your hair or your personality? You should have carmine to match that hair and crimson to match that temper. Who ever heard of a red-headed girl winning a race in a green plane, and with gray in addition? The color combination is atrocious."

"Your wit is a trifle heavy, Von. What colors are you flying?"

"Blood-red and gold."

"I hope you get second place."

"Thank you most kindly. I'm sure the sentiment is mutual. Here comes someone in a gray and green amphibian. That's not your *Kanamura*, is it?"

"Of course not." The Atom watched the flying boat's graceful swoop as it settled on the surface of the water. Suddenly she waved a slender arm. The pilot of the amphibian waved back to her. The Atom turned to Graham and me.

"That's Joey Vincennes. She's come to fly me up to Philly and watch the trial flight of the *Kanamura Fensu*. It's never been flown with a pilot before. The radio-controlled test flights gave results that are very promising, Vonnie. So promising that I know I'm going to beat you. Want to come with us and watch the test flight?"

"Not at all, Flaming One. I came down here to talk to your fiancé about some scientific matters. Go fly your potato-masher. I'm not worrying."

The Atom froze me with a look, kissed her future husband, favored me with another icy regard, and

jumped off the porch. Her slender form, neatly encased in the khaki flying suit she was wearing, described a beautiful arc down to the beach almost twenty feet below. She didn't stumble as she hit the sand, and ran on out to meet her friend who had taxied the amphibian up to the shore.

A sigh escaped from Graham Greene. "What a girl," he said out loud. "I don't wish you any hard luck, Von, but I hope she trims you."

"Let's change the subject," said I. "How are your experiments coming along?"

His face suddenly grew very serious.

"Unbelievably well, my friend. I have seven of the greatest scientists of the whole world living here with me now. The entire second floor is perhaps the most magnificently equipped scientific laboratory in the world. And we have accomplished the impossible. I haven't told the Atom much about it yet. We haven't told anyone yet. But I don't mind telling you, Von. We have produced synthetic life in that laboratory upstairs."

He rang for a servant and issued some instructions to him in a low voice. The man disappeared and returned several minutes later with a small portable cage containing a large healthy rabbit. Graham opened the cage and took out the bunny by his ears, and handed him to me.

"That rabbit was never born, Von. It has no ancestors. Atom by atom, molecule by molecule, we built up chemically from carbon, hydrogen, oxygen, nitrogen, phosphorus, sulphur, calcium and other elements the five or six microscopic cells that finally developed into that rabbit. We made him from inorganic gases, liquids, and solids, and he lives."

"Wait a minute," I said, my head swimming. "Do you mean to tell me that life is a chemical reaction? Nothing more?"

"For many years it has been admitted that life is a form of energy. You have seen chemical reactions that have produced light or heat. And what are light and heat but forms of energy? A chemical reaction produces them. Why should not a suitable chemical reaction produce life, that other mysterious form of energy? It does. It has been doing so for ages. There was no life on this planet when it was part of a flaming nebula, thousands of degrees hot. Somewhere, sometime, that chemical reaction took place and life started the age-long upward climb through slow evolution. Yes, life is a chemical reaction, my friend, the most wonderful, the most glorious chemical reaction in the world."

"Wait another minute," I said, "My scientific knowledge does not begin to approach yours, but I cannot accept blindly all of your statements. No chemical reaction has ever produced energy, any more than a chemical reaction has produced matter. In some chemical reactions energy is liberated, but in others, you recall, external energy, such as heat, for instance, must be applied or the reaction will not take place. In many chemical reactions energy is absorbed, not liberated. And in no chemical reaction is energy created or produced, in the true meaning of the words. The existing energy is merely liberated by certain chemical reactions. If I am not right, I would appreciate being corrected."

"You are right, Von. I was extremely careless in the way I expressed myself. Let me say, then, that existing energy is liberated in the form of life when certain long series of almost infinitely complex chemical equations

are carried out under proper conditions of light, heat, cleanliness, pressure, and so forth; and that by carrying out such a series of equations in the laboratory, we eight men have duplicated protoplasm and other basic life tissues, we have solved the secret of chromatin, we have synthesized a perfectly normal rabbit, and we intend to carry our experiments much further."

Graham Greene paused a minute to let the full meaning of his words sink in.

"Some of my father's secret is missing, Von. His notes often refer to a microscope of some kind, without which he could not have made the discoveries that he did. This instrument must have possessed such power that he could see atoms within the molecules, perhaps even the electrons and protons within the atoms. In this way he could actually see and study a life-cell, atom by atom, molecule by molecule. And so he could find out what they contained and how they were put together. In this way he analyzed those complex organic substances in a way that left nothing to be desired. After analysis came synthesis, and my father worked out the most intricate chemical processes and equations in the world and put them on paper. We can duplicate his results, but we cannot perform the analysis without his lost instrument. We have no instructions for the creation of a dog; without his instrument, which is perhaps the greatest part of his discoveries, we could not discover the process that would lead to the making of a dog. But that does not say that a dog could not be artificially produced. A dog or, for that matter, a human being, consists only of a certain number of elements, put together in a complex manner. As a result we have life, and an imperfect organism that will support life for a period of time averaging somewhat less than a century. At death it decomposes into the simpler compounds and its elements.

"An unusual and unexpected phenomenon has come up during our work. After we had carried out several thousand separate operations and had put together the few cells that were to be this rabbit, we found we had nothing more to do! The rabbit developed to maturity in astonishingly short time. In three hours he was full grown, for we provided him with food enough. First we nourished him with injected carbohydrates made up of suitable organic compounds, then later we fed him in the usual way. He grew before our eyes. Metabolism proceeded at an unprecedented rate, a rate that I should never have believed possible if I had not seen it. The eight of us were astounded by the thing. In the three most exciting hours of my life that thing grew from a microscopic artificially manufactured egg to a full-grown rabbit. Then the hectic rush ceased. Since then he's been a perfectly normal rabbit, particularly well-behaved. . . .

"I do not pretend to explain that dizzying growth. Bronnson, one of my associates, believes that those three hours were like half a lifetime to the rabbit. All things, even time, are relative. A day is many years to the fly that lives for that period only. All the first half of that rabbit's life was crowded into three hours, incredible as it seems. Oh, there's some reason for it, but we don't know what. When it reached maturity it stopped, it slowed down to a normal life. I wonder why. . . .

"We are dealing with unknown forces. As we do not possess that instrument of my father's we can only follow his instructions blindly. The accelerated growth is only one of the surprises that we have experienced.

"I know that you can be relied upon to keep a secret, Von. All of my father's voluminous notes contain only two processes. One is for the artificial manufacture of a rabbit. We have done that. The second is for the artificial manufacture of a man. We are doing that!"

"I think you are going too far, Graham," I replied. "Even admitting that you could duplicate the body of a man, would you not be entirely powerless to give him a soul? The soul is not an intricate compound of carbon hydrogen, nitrogen, and other elements; it is independent of the body. If you create a man, he will be a soulless, conscienceless, artificial product, not a human being. He might be very dangerous. It is always dangerous to meddle with the affairs of God and nature."

"Listen, Von. Let me show my side of the case. In the first place, you seem to be a victim of the popular and widespread idea that if man creates intelligence, that intelligence will destroy him, the superstitious and unkillable idea of Frankenstein, who created the famous monster. There is no logical justification for such a belief. Why should not a man, produced artificially in a laboratory, be in every respect as fine a man, mentally, morally, and physically, as any man naturally born? The latter product is nowhere near perfection even yet, after these few thousand years of humanity. I'm inclined to think that my laboratory specimen will be a better man than the average. He will not be handicapped by the inherited weaknesses and ancestral faults which influence the all of us, even the best of us. In the second place, again contrary to popular delusions, that thing we call soul, whatever it is, is dependent upon the body. If a man takes drugs habitually, not only his body will be wrecked, but very soon his entire character undergoes a change. Every outward manifestation of the soul is changed, and yet drugs are not spiritual, but actual physical objects, which do not act through the fourth dimension or in any other mysterious way to reach his soul. They affect the physical body upon which that soul, whatever it is, is dependent. In the third place, all 'spirit mediums,' to the contrary, we have not yet even one authentic, provable case of communication with a disembodied spirit, so we reach the conclusion that the body is a necessity to any soul to make itself known on earth.

"We do not know where the soul of a newborn child comes from, but it's there. It's there as a consequence of the body being there. We do not believe any child is born without a soul, do we? Nor do we know of any soul coming into being without a physical body. In all of our experience so far, we find that the former is dependent upon the latter, and we do not find any case of one without the other.

"I see no reason why my laboratory man should be an exception to the rule. I believe he will possess as much of a soul, or more, than you or I have. For four days we have been carrying on the process of manufacturing those vital cells that we expect to develop into a man, perhaps at that same breath-taking speed that the rabbit did. The speed of the metabolism is what astounds me. . . ."

The radiophone by Graham's elbow rang impatiently. Graham listened and turned to me with a look of horror.

"Von, Joey Vincennes crashed that amphibian just as they arrived at Philadelphia. Seemed to lose control just before she landed. She was unhurt, but the Flaming Atom's eyeballs are both destroyed in some way, and she is totally blind!"

His face was a study in love and despair.

"Von der Konz, here are the keys to my flying boat. Go get her and bring her to me quick, if you love a friend! She's at the American Aviation Company's test field. My plane is moored out there, to your left."

He took his heavy cane and walked into the house on his two artificial legs. He had been the victim of a crash once, himself.

I slammed the rabbit back in his cage and rushed out to the beach. Casting loose one of Graham's speedboats, I leaped in and was soon by the side of his hydroairplane. I am a racing pilot. I disregarded the regular air lanes, at the risk of being arrested, and made a straight line to Philadelphia. Graham's skyboat was not a racing crate, but it could do three hundred in a pinch, and I was crossing the Delaware River not much more than ten minutes later.

Something flashed in the sun above and ahead of me. I looked up and recognized it as one of the new silent electric planes, gleaming silvery white. It seemed to stall, put its nose down, and dive directly for me. Then the unknown pilot flattened out a scanty hundred feet above me and zipped over my head. I suddenly felt intense pain in my right wrist. My right ailerons jammed and none of the tail surfaces would work. I crashed on the American Aviation Company's field even before Joey Vincennes' wrecked plane had been removed. My crash didn't hurt Graham's amphibian much, except to wreck the undercarriage. I jumped out, determined to get medical attention for my wrist, which I found to be burnt as if someone had laid a red-hot bar of iron across it. I caught a glimpse of the almost invisible silvery plane darting away to the east.

Several men were running toward me, one carrying a doctor's satchel. He applied a thick dressing of some sort of salve and bandaged the wrist. Most of the pain was relieved. The next arrival was Garciae, the field superintendent, who ran up sputtering an irregular stream of poisonous profanity, some English, but most of it French.

"It is that white one, no? I see him flash by when Mam'selle Vincennes have the accident, and I am ver' suspicious, but I do not know, so I can do nothing! Now he flash by again and you fall, M'sieu! You are hurt, no? He shot you down, yes? I have sent a radio description of that ever-damned white one to all the police. They will watch for him, is it not so? It are those United Aircraft devils. They blind our best racer for life so they will win the races. They are cowards, M'sieu! And she is only a girl. They are pigs! They—"

I interrupted his torrent of words. "Wait a minute, Garciae. United Aircraft would like to have their plane win the coming races, because of the tremendous publicity and advertising value of such a victory. But they're not descending to any such dishonorable and murderous practices. Whoever it was that caused these crashes had nothing to do with United Aircraft, so get that out of your head! If Uaco is responsible for this affair, why would they attack me? I'm flying their boat next month, not yours."

Garciae looked at me in amazement, and noticed the scar on my left cheek. "Hermann von der Konz! You! What are you doing here?"

Before I could reply a radio operator had rushed up to the Frenchman and handed him a yellow slip of

paper. His attitude changed. He told the operator to reply that the instructions would be carried out.

"It is from Graham Greene," he stated. Then he turned to the group of men who were standing around. "Prepare at once the ambulance plane for M'sieu' Von der Konz. Put the girl there. And call the police and get an escort of armed planes. Quick! We will take no chances with that white one!"

He bustled off to direct the preparations for the return fight. The doctor who had bandaged my wrist spoke for the first time.

"That white flyer has a devilish instrument, sir. It's like a pencil of intense heat. He flashed it across the wing of that other plane. The heat wasn't great enough to melt through the metal ring, but it melted through the control wires, which you notice are exposed on this type of plane, and put the plane out of control, so Miss Vincennes cracked up. The other girl, the one the newspapers call the Flaming Atom, must have glanced up at the white plane just in time to get that pencil of heat across her eyes. She'll never see again, sir. I just came from attending her as well as I could. She has been suffering great pain, but she doesn't want an anesthetic.

"I had just finished bandaging her and was going to advise Garciae to call the police to investigate that white plane when you crashed here. That same thin beam of heat rays crossed your wrist, and a minute ago I was noticing where it had partially burned through your tail surfaces. I hope the police catch the flyer. He hasn't got more than one full minute's start, but there are many white planes in the sky at any hour of the day. He's got a good chance to escape, damn him!"

Two stretcher-bearers were gently placing the Atom on the cot in the Red Cross three-motored biplane. A spotless white bandage was over her eyes.

"Will you take me to him, Vonnice?" she asked. "I am taking you to him, Elsie." (It was seldom that Graham or I used her real name.) "If anyone in the universe can give you back those eyes, he can."

She said nothing and leaned back against the cushions. I climbed into the cockpit. The escort of three police planes, armed with deadly guns and manned by expert gunners, had just arrived. We flew back to Atlantic City. There was no trace of the white plane.

She was soon in Graham's arms, on that high perch overlooking the wide beach and the ocean. Neither of them said anything. Words were superfluous. I was standing near them, I was slightly embarrassed and ill at ease, and my shadow fell across the Atom's face. She seemed to sense it somehow, held out her hand, and took a blind step toward me.

"Thank you, Vonnice," she said. "I—I guess I'm out of it. I hope you get first place."

She's game through and through, that girl. A short, heavyset man rushed out of the house and puffed up to Graham. I recognized him as Bronsen, one of the seven scientists who were helping my friend in his experiments. His excitement was so great that it was several moments before he could utter a coherent sentence.

"It has started, Greene. The man! The experiment has been a success! It grows before our eyes! Soon we shall have a synthetic man! What a triumph for science! You must come quick!" He took hold of Graham's sleeve and tried to pull him bodily toward the door leading to the interior. Graham shook him loose.

"Bronnsen, I can't come now. The seven of you will have to take care of that from now on. Or six of you, rather. Tell Arnold that I must see him. He must attend to this girl's eyes as well as he can, right now. If we take care of the underlying tissues immediately maybe—please God—we can give her new eyes."

Arnold, I knew, was a surgeon of exceptional ability and almost superhuman skill. Just what Graham's plan was in regard to the girl's eyes, I did not know, but whatever it was, he could have confidence in the kindly, patient and astoundingly skillful Arnold, who was not only a remarkably able surgeon but a remarkably fine man.

Bronnsen hurried back to notify Arnold. Graham Greene led the Atom into the house and had her lie down on a luxurious couch.

The radiophone on the porch again rang insistently. It was the nearest to it, so I answered the call.

"Is this the residence of Graham Greene?"

"It is."

"I want to speak to Hermann von der Konz."

"I am he."

"I am Smith, of United Aircraft. Your absence from New York has caused us much inconvenience in the last two days. The *Nemesis VI* is ready for the many final tests, and we have only twenty-nine days before the races. It is essential that you come immediately to New York and cooperate with our men, according to the terms of your contract. Your delay has set us back, and we will have to keep you busy from now until after the races. Come at once."

Smith hung up. I went to New York. I had to keep my contract. It was up to my company's rivals to get another pilot to take the place of the incomparable Flaming Atom. Many aspired to such honors, but very few could qualify. I knew that American Aviation had lost one of the most nervy and daring flyers in the world. Perhaps I should have been glad that my only dangerous rival could not take part in the race. But I was not glad, though the greater part of the United Aircraft people were. So I went to New York and for three hectic weeks and more buried myself in the mass of work there was to be done; detailed tests of every part of the little plane that was aspiring to break the present record by flashing over the ten-mile course in fifty seconds or less. It was I who was to pilot that man-made meteor, so I was sure not to let any detail escape me. The ten-mile straightaway dash is a gamble with death. I suppose I'm a fool to fly it every year. . . .

Several times, in the evenings, I tried to call up Graham, but he had severed all connections with the outside world. I learned nothing of the success or failure of his experiments. He must have been a busy, weary man, for the strain of attending to the development of his artificial man, and his treatment of the Flaming Atom at one and the same time must have been very great. I could not blame him for not answering my calls.

Three days before the races the *Nemesis VI* was ready. I was advised to rest up, to relax. But my suspense and curiosity were too much for me. I went down to Atlantic City to see what had happened in that laboratory since I had left almost a month before.

Graham's servant ushered me into his living room. Arnold, the surgeon, was seated in an overstuffed chair, reading Shakespeare. He put down the book and smiled pleasantly.

"Hello," he said.

"Hello. I was expecting to see Graham Greene here."

"You cannot see Graham Greene now, Mr. Von der Konz."

"Why not?"

"He is asleep. The shock of the operation was very great. You do not know? We have just given him a pair of new legs, and that lovely girl of his two brand-new eyes. We are very proud of our success."

"You mean to say that you have restored her sight?"

"Yes. And his legs. That discovery of his father's will be a great boon to mankind. I doubt if I could clearly explain to you the process by which we have grown synthetic tissues in the place of those that were destroyed. It is marvelous—"

"Greetings, Vonnie!" the Flaming Atom called out to me.

"Well, well, Flaming One. You're a blue-eyed girl now!" I said, and it was true. Her eyes had previously been brown.

"Isn't it wonderful? Arnold here won't let me fly in the races this year though. He's awfully cautious. He says I'm too weak."

A tall blonde man with an exceptional physique entered the room carrying a letter. He handed it to the Flaming Atom. She read it and then overwhelmed him with congratulations. Arnold performed the introduction.

"This is Robert Nelson, the synthetic man," he said. My mouth fell open from pure amazement. Nelson noticed it and smiled. He repeated my name. "Aren't you," he asked, "the man who tried to tell Graham Greene that I would not possess a soul?"

"I don't—I can't understand—you speak English!"

"Certainement. Mais aussi je parle le meilleur français!"

"Let me explain," broke in Arnold, as I hesitated, wondering if I were the victim of a practical joke. "One of the associates of Graham Greene, the gentleman with the name of Bronnsen, made a particularly careful study of all the circumstances connected with the abnormally fast development of that rabbit you saw, and reached the conclusion that its growth was only *relatively* fast, and otherwise quite normal. It was Bronnsen who saw that the synthetic man would grow at the same terrific rate until he reached full physical and mental maturity. So he provided, with exceptional foresight, for the education of Nelson by means of the hypnotic machines which are just now being adopted in the schools. Bronnsen also was careful to have these machines employed under the supervision of one of our best modern educators, and to have the machines speeded up to a rate corresponding to the abnormally fast growth. There were many other problems, such as feeding, exercise, and so on, which were also solved more or less satisfactorily. Bronnsen can tell you more about it than I can, for I have been devoting all of my time to the restoration of the girl's eyes and Greene's legs. But anyway, it took just nineteen days for Bob Nelson to reach adult manhood, and the growth stopped the same way that an electric light stops when you snap off the current. Bronnsen says he is very near to the secret of the rapid growth, but hasn't solved it yet. I hope he does. It fascinates me.

"But I assure you that Bob Nelson has a soul. You can see for yourself that he has a magnificent body, and you will take my word for it that he has a well-trained and intelligent mind. He speaks two languages and can

do trig, and calculus, not to mention the fact that he has become an excellent fancy diver, and if I guess right from the congrats he has just received from a formerly blind racing pilot, he has just qualified to fly the *Kaninuwa Fensu* the day after tomorrow!"

Bob Nelson smiled.

"He has," stated the Flaming Atom. "The same remarkable skill that made him an expert fancy diver in two hours has just enabled him to qualify for the races. I asked American Aviation Company to take him as my substitute, so they took him in preference to the other good pilots who had qualified. That's what you call pull, Von. I warn you, you're going to be flying against a superman."

Later that afternoon, after I had watched the synthetic man throw a heavy triplane around the atmosphere with the skill and nerve of an expert and experienced pilot, I reached the conclusion that truly I was not matched against a human flyer, but against an efficient scientific machine. I often wonder what my reaction would have been if I had seen into the future and learned what was to happen at the race.

He, who was called Bob Nelson, was not hindered by the age-old faults and inbred defects of humanity. He was perfection *plus*, a marvellous machine with a brain. An ordeal that would tire an athlete was nothing to that marvelous body of his. He learned difficult processes with incredible rapidity. I watched with wondering admiration that evening when he did a back triple flip from a thirty-foot diving platform and entered the water with hardly a splash.

"Von," I said ruefully to myself, "you can feel your speed title slipping." And it was so. My confidence was going rapidly.

Later that evening Arnold let me see Graham for a short while, though the operation had greatly weakened him, as the Atom's had weakened her. But my friend had a brand-new pair of legs, and he was supremely happy.

"You can see now," he said, "what a great benefit to humanity my father's process will be. And yet almost eleven years ago, when he announced that he could create living beings and living tissues in the laboratory, men persecuted him and practically drove him to disappear. I often wonder if he's really dead. Eleven years, without a word from him, the greatest scientist in the world. I shall never begin to approach his ability."

Still later that evening I became an unwilling eavesdropper at a conversation that filled me with a vague, shadowy misgiving, and the memory of which helped to account for the events that occurred at the race. After supper I had wandered into the parlor and had seated myself in the big overstuffed chair in the corner, and had idly picked up the Shakespeare that Arnold had been reading earlier in the day. Hardly had I seated myself when the Flaming Atom entered at the opposite end of the room at one side at precisely the same minute that Bob Nelson entered at the other side. The back of the big chair was toward them, and I was completely unnoticed. I didn't pay much attention to them until I heard their conversation. Then curiosity held me, though I knew that they thought they were alone and I could have left silently by a door near me. I doubt if my listening in was justified.

"Atom," said Bob imploringly, "can't you give me a little hope? You know I love you."

Her voice was very serious as she replied.

"I think you're foolish, Bob. I'm the only girl you're acquainted with, and you think you're in love with me. There are many things about the world you have still to learn. There are millions of other girls in the world, much more attractive than I am——"

"There couldn't be."

"—and if you knew a few of them you would soon get over your silly infatuation for me, Bob. You really haven't lived long enough to know what love is. I like you and admire you, but I loved Graham Greene before you were ever—created."

They were silent for a moment. When the boy replied there was a bitterness in his voice that hurt.

"I know. You couldn't love a—synthetic man. I'm just an imitation, a scientific experiment. Just a chemical reaction. I wish Graham Greene had never——"

"Please don't. You know it isn't that. You're not an 'imitation.' You're far better than most men could be. And I know that you have honor, Bob. I know you're a game sport. So I know that you'll realize that I'm engaged to a man I love, a man who has given me back my eyes. But I loved him long before that happened, and I'm going to keep on loving him. Realizing that, you'll see that you mustn't be making love to me. You'll get over this disappointment, Bob. You'll probably fall in and out of love several times, and there are lots of lovely unattached girls in the world."

When Nelson answered, the bitterness was gone, and its place was taken by something admirable.

"I beg your pardon, Flaming Atom. I'll never speak about the matter again."

"Thank you, Bob."

And Robert Nelson never did.

The next day Graham received a letter from his step-uncle, Elmer Calvroom. The letter was long, boastful, and threatening, characteristic of the man. Calvroom disclosed the details of his escape from prison, defied the police to discover his present hiding place, explained that he had altered his features and even his fingerprints until any positive identification would be impossible, and concluded his letter by revealing himself as the man who had been in the white plane that had caused the two crashes at Philadelphia.

A voluminous postscript gave many of the details of his device for projecting a long, narrow beam of intense heat, which he said he had invented while carrying on experiments with the rays above the heat-rays proper but below the infra-reds. Calvroom's pride in his accomplishment was in every word of his description of the thing. I had previously been acquainted with his boastfulness, so the letter was what I would expect from the man. It is hard to adequately describe Calvroom so that you can get some understanding of him. Perhaps his most dominant characteristics were a cold daring or nerve, selfishness, egotism, great scientific ability, especially along mechanical or electrical lines, and an almost blind determination to get what he wanted, no matter who opposed him. So it did not surprise me that Calvroom demanded that Graham turn over to him the secret of synthetic life immediately. It had been because of an unsuccessful attempt to kill Greene to obtain that same secret, that Calvroom had been imprisoned. This time, he stated, unless Graham gave it to him he would kill him with that heat ray.

We had already seen two examples of the effectiveness



of that beam of heat. At the Flaming Atom's suggestion, Graham showed the letter to the police and asked for protection. He got it at once. The police were particularly anxious to locate Calvroon because of his jail-breaking exploit, so that very afternoon a detachment of police arrived to act as Graham's bodyguard.

We never expected that Calvroon would make his attack on Graham Greene the next day at the races. But, after all, it was characteristic of his coolness and his determination that he would take the earliest opportunity to surprise his victim. He must have learned about the police guard and decided that Graham was not going to surrender that discovery of his father's, even under threat of death.

The morning of the races was clear and a trifle cold. There was hardly any wind at all. Most of us who had been staying at Graham's house went to the race-courses in south central New Jersey in a luxurious cabin monoplane piloted by the Atom's girl-friend, Joey Vincennes. Both the Flaming Atom and Graham Greene were present, the latter against the advice of Arnold. Bob Nelson and I were present, conversing pleasantly on the subject of plain and fancy diving, though neither of us was thinking as much about that, as we were about the ten-mile dash. Arnold was present to keep an eye on Greene, and Bronnsen was present to see the artificial man win the races. Because of the injury to the girl's eyes which had occupied all of Graham's attention, and the later operation on his own legs, it had been Bronnsen, much more than Graham Greene, who was responsible for the magnificent development of the synthetic man. Bronnsen was there to see the laboratory product prove his superiority over a natural man. Bronnsen informed me that I didn't have a chance.

Thousands of spectators had come by train, plane, and car, to see the races. Of course, traffic was jammed, accidents occurred and both the air and ground police had a hard time of it.

High above, with powerful binocular telescopes, we watched the various preliminaries; the chute-jump exhibitions, the fireworks display, the sham battle, the stunting exhibitions, the various longer races. The forenoon passed, each minute replete with thrills. Then the time approached for the ten-mile dash.

The ten-mile dash is the most fascinating of the events, both to the spectator and to the contestant. It is in the ten-mile races that the supreme speed-records are made and broken. In a longer race, the pilot does not dare to use the ultimate maximum of speed and power in his plane, for neither the man nor the plane could stand up for any period of time longer than a minute and a half under the terrific acceleration necessary. At the six-hundred and more miles an hour, as you know, the course must be a mathematically straight line, for a pilot taking a corner even at three hundred goes unconscious for a few seconds, and a pilot taking a corner at four, five, or six hundred miles an hour, in ninety-nine cases out of a hundred, rapidly becomes a quite dead pilot. Either he doesn't recover his senses in time to keep his plane from crashing or else the turn is too much for his brain. In either case he's done for good.

Joey Vincennes landed the cabin-plane in the space reserved for contestants, and Bob and I got out and ran the gauntlet of television scouts, cameramen, sound-movie makers and snapshot hunters. Side by side were parked the gleaming little *Nemesis VI*, blood-red and

burnished gold, and the *Kaninura Fensu*, in the milder tones of gray and green. These two were the only entrants, each representing one of the two great aircraft manufacturers. Trusted employees, expert mechanics, were seeing to the last minute detail of the tuning up of the planes. The radio announcer spoke into his microphone, informing all the world that the pilots of the two planes were, respectively, Hermann Von der Konz, holder of the present record, flying for United Aircraft, and Robert Nelson, an unknown pilot, flying in the place of the tremendously popular "Flaming Atom" for American Aviation Company. The announcer explained that the Flaming Atom had been put out of the race by an accident.

Of course, none of the thousands upon thousands of spectators, except that little group in the cabin plane, had the slightest idea that Bob Nelson was a "synthetic" man. The world was still in ignorance of the work of that group of seven scientists, who had followed the directions left by the missing Thornton Greene.

In spite of all that the police could do, betting was high, and literally millions of dollars, in the aggregate, were wagered on the outcome of the race. Each year that happens. The gambling instinct cannot be stamped out by law.

It will be impossible for me to describe that race in as short a time as it took to fly it.

There was a little delay at the start because of an accident to one of the six high-speed movie cameras that, taking exactly one thousand pictures a second, and perfectly synchronized, were used to record the time of the race, accurately to the thousandth of a second. Races have been won by as close a margin as three one-thousandths of a second.

Bob Nelson had never before seen an airplane race, so he was ignorant of many of the customs and rules of the game. The officials assumed that he must have been cognizant of the rules, or he wouldn't be flying, so they failed to enlighten him.

Literally speaking it is not a race. Each plane flashes over the course separately, and then the records on the films are compared. The fastest (or in this particular instance, the faster) plane wins. This was the detail that the synthetic man didn't know. So when the starter fired his pistol, as a signal that I could start whenever I was ready (the plane parked to the left always starts first), Bob Nelson, thinking that we were both to fly against each other, instead of against time, started too. But I didn't notice him. I was too much occupied by the *Nemesis VI*.

Five miles are allowed to get up speed. That is, we had five miles to fly before flashing between the first two pylons that marked the real beginning of the race, and then the ten miles of the race itself to the finish line, marked by two other pylons. The time made in those preliminary five miles does not count in the score. A pilot tries to cover them, not any faster than necessary, but to accelerate up to his absolute maximum speed just before reaching the start, and to keep that maximum until he has finished the ten miles.

In order to be sure that the course will be a straight line, control locks are used. As he passes the start the pilot pulls down a lever that locks the controlling surfaces of his plane immovable, as the pilot could not, at that terrific speed, keep his plane in a straight line unless he possessed superhuman strength. Besides, the control-

lock leaves the pilot's hands free to handle the throttle.

Crushed against the back of my glass-enclosed cockpit by the terrific acceleration, I noticed, just after I had reached my maximum, flashed between the pylons at the start, and jerked down the control lock, that close behind me was the gray-and-green *Kanimura Fensu*, AND IT WAS LOCKED ON A COURSE THAT GRADUALLY APPROACHED MY OWN.

The two planes, each at its maximum speed, were keeping even with each other, at least as far as could be determined by the naked eye. It took very few seconds, at better than six hundred and fifteen miles an hour, to see that the two planes were due for a crash, that their two courses were not parallel, but slanting towards each other. And still they kept even. If either could have increased its speed by fifty or sixty miles an hour, which was impossible, one could have passed in front of the other, and no wreck would have taken place. But they kept even.

In order to avert the crash that would be the end of both planes and both flyers, one of us had to slow down, thereby losing the race.

It was a supreme battle of nerve, and it lasted less than forty-five seconds. When the *Kanimura Fensu* was actually within a hundred feet of me, and drawing steadily nearer every fraction of a second as the two little planes hurtled over their intersecting courses, I cut the throttle of the *Nemesis VI* to save my skin. I'm more important to myself than any race is.

But an airplane has no brakes like an auto, and deceleration is never quick. I perceived that I had waited whole seconds too long. Bob Nelson's plane was perceptibly gaining on me the second I surrendered, but it was so close to my side that I could see we would not clear each other.

I have had several close calls, and I am intensely interested in remembering and speculating about the rapidity and clearness of thought in times of danger. It seems as if time had slowed down. Each split second is clear, and action is instantaneous. Hardly three seconds after I had cut the throttle I had seen what was to be done, and by a combination of reflex and reasoning, had done the only thing that could have saved my life, for Bob Nelson had held steady on his course at his maximum speed, coolly taking a chance with death. He judged, correctly too, that I would concede the race to save my skin.

When I saw that further action was necessary, I jerked up the control lock, kicked the rudder bar violently to the left, and jerked back the control in order to send the plane up at a sharp angle, for I knew that I would lose consciousness as I swerved, and I figured that the higher I went the farther I would have to fall, the farther I fell the greater chance there was that I would come to in time to save myself. At three hundred miles an hour the unconsciousness is momentary. At a faster turn it is longer, and too great a speed on a curve will kill the pilot. In spite of my deceleration, which had hardly lasted three seconds when I made the curve, I was still traveling at more than five hundred miles an hour.

As the *Kanimura Fensu*, piloted by the synthetic man, flashed between the finish pylons to set a new world's speed record for man-carrying planes, the blood-red and gold rival, *Nemesis VI*, was reaching the top of its upward climb. It stalled, hesitated motionless for half a second, snapped back, and dove. It fell crazily.

I came to when it was close to the ground, landed it clumsily, and got out just in time to witness the incident that closes this story.

For the dramatic things happened then.

A white electric plane approached at great speed, high above the course. It flipped over on one wing, turned, dove, and passed over the cabin-plane where the other members of our party had been watching the race through the binocular telescopes, and as it passed, the beam of heat severed the control wires of the tail surfaces. The cabin plane started down in great jerks, as Joey Vincennes tried to maneuver it to the ground in spite of the useless tail.

I do not know what it was that caused Calvroon to pick that time for his revenge, but I think it was largely that theatrical love of the dramatic and daring that had manifested itself when he had previously tried to kill Graham Greene. And Calvroon's cold-blooded nerve, together with his conceit and that one-track mind of his, all combined to cause him to take this apparently foolish method of attacking.

But he had a good chance of succeeding. The police planes were all on the ground. If Calvroon got one minute's start with that silent electric skyship, the only thing that could catch him would be one of the racing planes, which of course had been stripped to the last superfluous ounce, and carried no arms. They would be an easy prey for that pencil of heat. I think Calvroon was perfectly aware that he would be hard to catch and harder to capture, or he would hardly have come so openly.

Revenge must have been a prominent motive. The previous attempt to kill Graham Greene had been a means to an end. This time the young scientist's death was an end in itself. Calvroon had always been emotionally repressed, and his hates were intense, whenever they came to the surface.

The white plane performed a clever time-saving variation on an Immelmann, and passed over the cabin plane a second time. This time the left wing partially crumpled.

I think Calvroon must have increased the power of his instrument since the episode at Philadelphia. The heat nearly severed the wing entirely.

The plane was still under control, of a kind, though it was side-slipping rapidly. Calvroon turned again to deliver the final blow.

I doubt if you realize the few seconds it took for the thing to happen. The populace were watching dazed. A few of the police had recovered from their surprise enough to run toward one of their armed planes and start to take off. They would have to act quickly, or the electric plane would be gone, probably to the east, out over the ocean, the direction in which it would have a very good chance of total escape. It had escaped that way once before. After all, Calvroon's action wasn't quite so foolish as it appeared at first moment.

The one who defeated Elmer Calvroon was the synthetic man. Recalling the conversation I had overheard in the laboratory, I think I can understand his motives, too. The Flaming Atom was on the cabin plane, and Bob Nelson made the sacrifice.

He was still in the air from the race, returning to the field from which he had taken off. He saw and understood immediately what was happening. Without one

(Continued on page 150)

# Synthetic

By Charles Cloukey

*(Continued from page 138)*

second to spare he put his throttle on and the gray and green comet crashed into the white destroyer. They fell together in a twisted mass of metal and flames. It was the only possible way he could have stopped the white plane from passing the third time over the ship that carried her whom the synthetic man loved. I looked at

my watch. Less than eight minutes had passed since I had taken off, yet it seemed an eternity.

The cabin plane landed safely.

Bob Nelson's life was short, and his death glorious. As I stood there it came to me clearly, beyond the shadow of a doubt, that the synthetic man had a soul.

THE END