

The Regenerative Wonder

By WINTHROP W. HAWKINS

We have read of a curious line of insurance of the hands which is used by artists, especially by those in the musical career, where their very life-work is tied up in their hands. Imagine a great violinist, such as Paganini, having his hand paralyzed and being unable to finger the strings of his violin. The clue to this story lies in this feature, and it develops quite an exciting bit of writing.

Illustrated by MOREY

IN high school I remember Irvin Pembert as a tall, dark, serious youth who scarcely ever smiled. We boys were wont to call him unsociable, and to refer to him as a queer fellow, but nevertheless we held a certain respect for him, and marveled at his great ability in physiology and botany, subjects which the majority of us cared very little about. He never took an interest in athletics, and lived almost entirely apart from the rest of the class, but was a musician of no mean talent, and played the piano in the high school orchestra; this was the only organization in which he took an interest, and in which he associated with any of his fellow students.

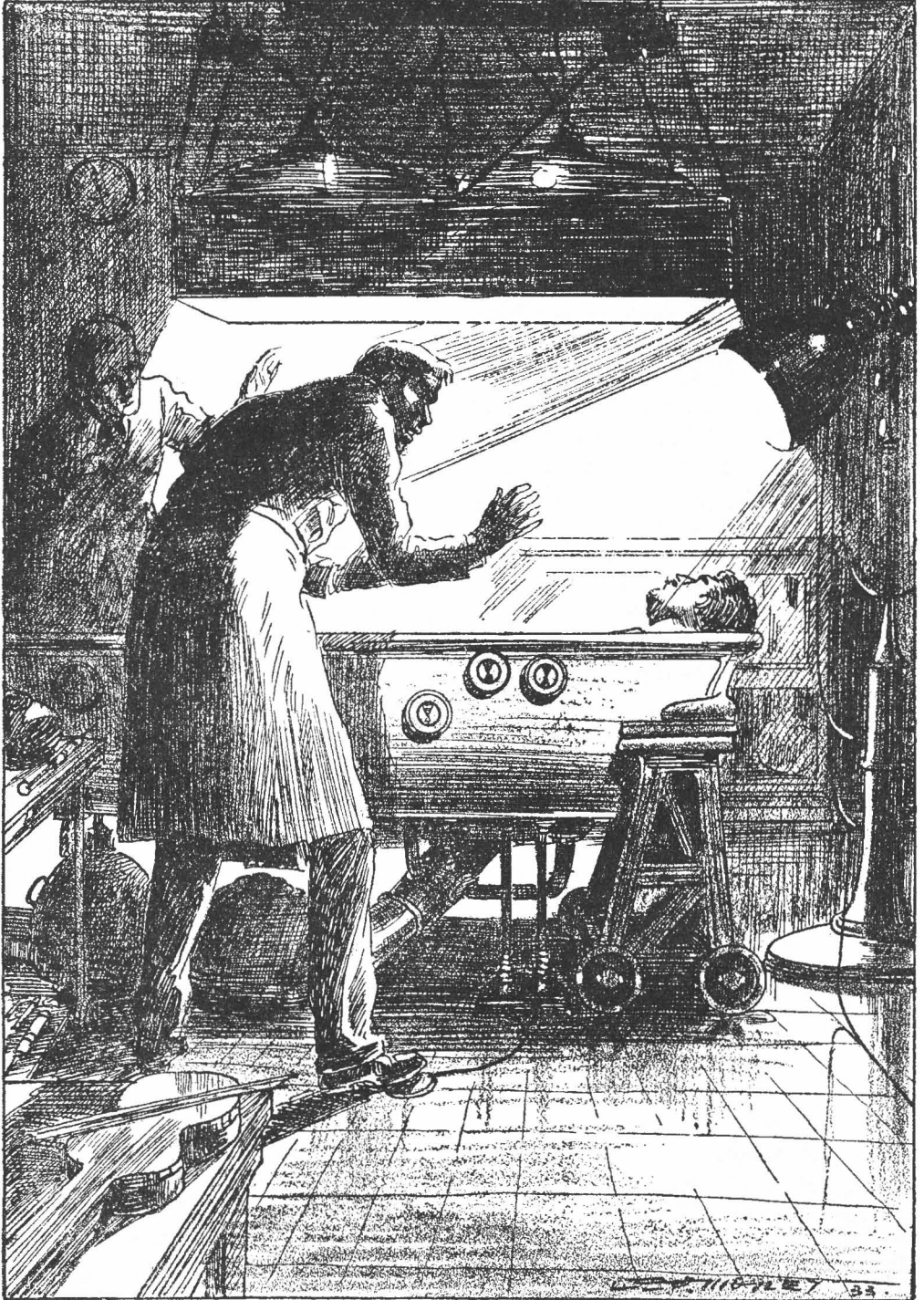
College did not change him, and I believe that he became even more studious while at the University. He and I attended the State University together, and it was there that we developed our friendship, although we had lived in the same town all our lives and had attended the same high school without becoming more than casual acquaintances.

Our friendship began one Sunday evening. I was reading in my study, when I heard a tap at my door, and, after calling loudly for whoever it was to come in, I was surprised to see Pembert enter the room and, in a rather apologetic voice, say: "Smith, did you get that third trigonometry exercise figured out? I've worked on the damned thing for an hour, and can't do anything with it."

"Sure, Pembert," I replied. "I got it from Fraser this afternoon; he worked it out after lunch. I guess he was the only one in the class who could do it."

"I thought I was the only one who couldn't," said Pembert, seating himself. "I've often thought of what it would be like if everybody had the same tastes and inclinations."

We went over the trigonometry exercises together, and Pembert stayed for almost two hours. I think that I never spent two hours in such an interesting manner as I did that evening. Pembert was the best biology student in the class, and had some very interesting theories. He possessed a very compre-



Boldini appeared to be in a sound sleep, but as my friend swung back the projector he stirred and sighed slightly.

hensive knowledge of the cell theory, organic evolution, and such, and I proved a ready listener, as biology was one of my weak subjects, and Pembert was very lucid in his explanations. When he left that evening I gave him a hearty invitation to visit me again, with which he seemed greatly pleased, as he was not popular among the boys, and seldom associated with any of them.

That Sunday evening was the first of many other evenings that Pembert and I spent together. I would sit and listen for hours while he would explain some point in biology and supplement it with some theory of his own, which would invariably prove to be very interesting. We discovered that we had in common a liking for Latin, in which study Pembert was very proficient, and we spent many hours going over Latin grammar or reading Horace and Vergil together.

In due time we both received our B. A. degrees, and Pembert went away to study medicine, while I became associated with a popular magazine and settled in New York. We corresponded for a few years after this, but at length our letters ceased, and I lost track of my old friend.

FIFTEEN years passed by, and one day I received a letter from Pembert; it was post-marked Bangor, Maine, and I immediately concluded that he must have established himself in that city after his graduation from medical college. In the letter he asked me to visit him, pressing me to come as soon as possible, and aroused my curiosity by remarking about having something very important to tell me. The last part of the letter ran:

“. . . I think that you were really the only personal friend I ever had, and the only one who ever understood me, so I want you to come up here, and be the

first to see what I have done. I should like to talk it over with some one, too, and discuss its possibilities, so pack up and come along on the next train, if possible, and be prepared for something big.

Your old-time friend,

Irvin Pembert.”

He met me at Bangor, and, as I shook his hand, I could not but notice the aged look which he wore, and the predominance of grey in his hair. Pembert could not have been more than forty-five years of age, yet he resembled a man of sixty or more. I thought to myself: “The same old Pembert—all work and no play.” He was genuinely glad to see me, and regarded me almost with tears in his eyes.

It was then about eight in the morning, so we breakfasted at a restaurant, and soon afterwards were speeding northward in Pembert’s car. He explained that we should not reach our destination until after nightfall, so we took along some fruit and ginger ale to serve us as lunch, as we should not be stopping *en route*.

As we drove along we discussed the past, and related our various experiences since college days, but Pembert remained silent upon the subject about which he had written me. I, of course, was very curious, but when I mentioned it, he merely said: “All that in good time, Smith; a little later.” He told me about his life after the completion of his medical studies. He had practiced in Chicago for a few years, and then in Milwaukee, but finally had left the West and moved to Boston. From Boston he had come up into Maine, where he had resided ever since. He was still a bachelor, and explained that he had not had time to bother with women. Not once during our journey did he volunteer anything concerning what he had written me about in his letter.

WE drove on a road through the woods all day, and at about twelve that night arrived at Pembert's place, a large, log camp in a grove of pines. He had with him a Negro servant, whom he called Sam, acting as valet, cook and handy man, who prepared us an excellent dinner, to which I did ample justice after my long drive in the bracing air. Pembert ate little, and seemed restless and rather excited all through the meal. When finally we had lit our cigars over the coffee, he settled back in a large arm-chair and began:

"Now, Smith, I am going to tell you why I have brought you up here, and what I have to show you. I suppose your knowledge of biology is rather limited after these years away from college, eh?"

"Well, I still remember a little about amœbas and frogs," I replied, "but it's pretty hazy, so don't go too deep into detail, Pembert."

"There's really not much to it, in a sense," said he, "but to illustrate: Do you remember the hydra we used to study, and how two individuals can grow from one which has been cut in two—regeneration, we call it?"

"Yes, I recall that," said I, wondering what was his point.

"Perhaps," he continued, "it would be better to say: Cut a piece from one and another piece will be grown to take its place. Well, I can do the same with any other animal, man included."

At this startling assertion I grew dizzy and my vocal organs seemed completely paralyzed. Pembert slowly tapped the arm of his chair with the fingers of his right hand, and regarded me with a level gaze. At length I blubbered out: "Why, man, do you mean . . . do you mean that you could cut my head off, and it would be possible for me to grow another one?"

"I have never tried it," he answered, with a short laugh, "but I have reason to believe that it could be done."

I simply stared in bewilderment, and presently he continued:

"I'm glad you didn't take it as a joke, as the majority of people would," and then, straightening up executively: "Well, I'll endeavor to tell you all about it."

THE idea hit me when I was practicing medicine in Chicago, and in my spare time I made my researches and collected all the material I could, pertaining to cells and their structure, at the same time working on and experimenting with various rays, chiefly those produced by radium and electricity, which I thought might be of help to me in discovering something to serve my purpose. Then I moved to Milwaukee, and there, with the help of Robert Sill, one of the most brilliant scientific men in the country, although not widely known, I got my idea fairly under way, in a theoretical sense, but lacked the capital necessary for any conclusive experiments.

"However, Sill was acquainted with a millionaire in Boston, to whom he wrote, appealing for financial aid. He was, of course, curious, and wanted us to come to Boston first, which we did. We explained what we were working on to Granby—Allan R. Granby was his name—and he immediately became interested and offered to advance us any amount we wanted, to be invested in material to be used for experimental purposes. I had amassed a considerable fortune while in Chicago, but had expended practically all of it, while experimenting on a small scale in the West, and my helper was in the same financial straits, so we were indeed lucky to secure Granby's help.

"Sill's death was rather a detriment to me, for he died of heart failure four

days after our arrival in Boston; but things were in a condition so that I could carry on alone, so I brought Sam along, and came up here out of the way to work. Granby furnished all the money I needed, which was a considerable amount, for I had to use some radium, and at length I had the satisfaction of seeing things in order for some conclusive experiments. It took me a considerable time, for Sam and I had to do all the work ourselves, and I spent many hours working on the ray which I use. Then I experimented on a dog, and found it to be a success, after which I immediately wrote to you, even before I wrote to Granby, for I wanted you to be the first to see what I had accomplished."

Pembert paused, and I sat staring, almost as completely bewildered and in the dark as ever. Then he continued:

"If you would rather wait until morning, we can go to the laboratory then, but——"

"I'd rather go now," I eagerly interrupted, full of curiosity and wonder.

PEMBERT led the way to a door at the back of the room, and we entered. The laboratory was large, with several tables and cabinets filled with chemicals and scientific instruments. In the middle of the room was what resembled an operating table, with the ends and sides turned up, so that it formed a sort of a tank set on legs, on each side of which were tanks, the one on the side nearer me being considerably larger than the other, and there was a tube running under the table, connecting the tanks. Near by was what I immediately took to be the projector of the ray about which my friend had spoken. There was a large, rectangular box, the length and breadth of the table, suspended by wires from a movable, metal support, and connected by

other wires with a set of batteries in one corner of the room. Indicating this, Pembert began:

"This, Smith, is the ray projector. Sill did most of the work in connection with it, and had it all on paper before he died, so that all I had to do was to construct it. Of course, the original idea was mine, but I could not have progressed far without his help, as I was not very well trained in mechanics and physics. Radium and electricity are both used in the production of the ray, which is projected through the glass in the bottom of the box. The glass is also our invention; it is very tough, and thick, and serves to amplify the ray as it passes through it."

"And does this ray have the power to cause an organism to regenerate any part of the body that has been removed?" I asked.

"Not directly," my friend replied, "but we might say that it prepares the organism to regenerate the part. I'll explain more fully.

"This ray has the power to reduce all the cells of the organism to the same level, as far as function is concerned. In other words, it unspecializes them. As you know, man and all higher metazoa are composed of many different kinds of cells, all specialized for some particular function, such as muscle fibers, nerve cells, and the like; but in the lower metazoa, such as the hydra, we know that the cells are not highly specialized, and this gives the animal the power to regenerate a whole from a part of the organism. So you see that, with this ray, the same thing is made possible for all animals."

I fairly gasped as I realized the possibilities of this thing: The amputation of a limb need no longer be dreaded, as another might easily be grown to take its place; a man might be cut into a number of pieces, and each piece might

be made to regenerate another man. But what complications might then arise; which would be the original man, and would they all have the same psychological traits?

I laughed aloud as these and similar fantastic thoughts struck me, but immediately checked myself and gave Pembert my attention as he continued.

THIS table is what we might term the operating table. It is my own invention, devised for this special purpose. You will notice that the ends and sides are turned up, so as to form a sort of vessel, in which a body surrounded by a liquid may be conveniently kept. In the tank on the left is stored water, in which have been dissolved all the food elements essential to the nourishment of the organism, while the new limb or whatever it happens to be, is being formed. After the ray has done its work on the body, I let this liquid flow from the tank into the vessel, where the cells of the organism may absorb the food elements from it, and give off their waste matter into it. I then slightly incline the table, so that the liquid may flow through an opening on the other side, and pass into a second tank, where there are chemicals which purify it; it is then forced into the first tank through the tube which passes under the table, and is recharged with food elements. Thus a constant flow is kept up between the two tanks, and the organism is supplied abundantly with nourishment. The limb, or whatever part of the body is to be amputated and regenerated, I remove after the organism has been subjected to the ray."

"Is this necessary to the success of the operation?" I asked.

"Yes," he replied; "if it were removed before the cells were transmuted, it could not be regrown, for it is natural for the body to grow into the same form which

it had after the cells were transmuted by the ray."

I nodded, and Pembert continued:

"In one of my first experiments, I endeavored to grow a tail on a dog, but I removed the original tail before the cells of the animal had been transmuted by the ray, and the result was very surprising, although perfectly natural under the circumstances." Pembert smiled wryly, and continued: "Instead of regenerating the caudal appendage, the organism began to multiply by germination. I was deeply interested, so I let the process continue, and now I have two dogs where I originally had one. They are identical in every respect, except in size, the original one being the larger; and, of course, both are tailless."

Pembert laughed shortly, and I weakly subsided into a chair. "I'd laugh, too," I said, "if anyone but you had told me this, Pembert."

"I can assure you of its truth," he replied; "both animals are outside in my kennels, living healthy, normal lives."

"But you haven't explained how you convert the body into its original state after your purpose has been served," I said, when I could find my voice.

I SEE that I am still afflicted with absent-mindedness," my friend replied, "or I should have mentioned that before. That function, also, is performed by the ray; to do this, a different combination of radium and electricity is used in its production. As I have said, Sill did most of the work in connection with this ray, and was practically responsible for it, as I could not have progressed far without his help. When he died, he left the results of his research, and proposed plans for the perfection of the ray, all on paper, so that with this help, I was enabled to successfully construct the projector. You will notice that there are two switches

to be used in the operation of the ray; one produces the combination in which radium plays the leading part; this is the one which transmutes the cells of the organism, and prepares it for the regenerative process; the other produces the combination in which electricity is chiefly used, and this restores the body to its original state. In my practice in Chicago, I had had considerable experience with radium and electricity, as well as with several different rays; the two former subjects suggested immense possibilities to me, and in my spare time I carried on a few private experiments, with some very astonishing results. I realized that with the help of a trained electrician I might accomplish much more, so I moved to Milwaukee and secured the help of Sill, who immediately became interested in the subject, and took over practically the entire work on the ray, which gave me more time to spend in my biological research, and thus I was enabled to get ahead much faster in the development of my idea. Of course, I kept track of Sill's work, and superintended it, in a way, so that he could work on my idea, and improve on what I had already done. I won't go into any further detail in connection with the ray, as it would undoubtedly prove rather confusing to you, and I confess that I myself am not much of an authority on some of the details."

"Yes," I replied, "I've done well to take in as much as I have to-night, but I'd certainly like to witness an operation."

Pembert glanced at his watch, which showed three o'clock. "I guess we have no time for anything like that now," he said, "but in the morning we'll perform one; and now, I think, we may as well go to bed, as I confess I am rather fagged after my long drive today, and you, too, must be fatigued after your journey. Sam will have left us some

proper refreshment in the dining-room."

I slept little that night, and was up and dressed before six o'clock. It was an ideal summer morning, and the fresh air and scent of the pines refreshed me as much as a good night's sleep would have done. I discovered the road by which we had arrived the previous night, and strolled along it through the woods. It was a road which I presumed Pembert and Sam must have made themselves; it was well laid and extended for about a quarter of a mile, where it connected with the main road by which we had come from Bangor.

When I returned to the camp, Pembert was up, and after we had breakfasted he took me outside to his kennels, where he kept a number of dogs for his experiments. He showed me the two he had told me about the night before; they were stretched out side by side in a patch of sunshine, and seemed perfectly normal in every respect, except, of course, that they were tailless, as my friend had said. They were white bull-dogs, with two black spots on their backs, both being marked exactly the same.

"**W**HY not try an operation on this one?" I asked, indicating the smaller of the two; "His life history, what there is of it, is a very interesting one. I should like to observe him a little closer."

"As you say," replied Pembert, and, taking the dog, we entered the laboratory.

With my heart beating excitedly, I watched Pembert administer chloroform to the animal, and place him on his side on the operating table.

"He would probably not be inclined to stay on the table of his own free will," my friend said, "so by chloroforming we avoid unnecessary trouble, as it

would be rather bothersome to have to strap him down."

As he swung the ray projector around, and suspended it over the table, I cautiously drew back, nevertheless craning my neck, so as not to miss anything. Glancing at me, my friend laughed, and assured me that I need have no fear, as the ray was focused on the top of the table, and would have no effect on anything outside of the organic matter on its surface. He then made a few adjustments and turned a switch.

For a few moments nothing seemed to transpire, but soon I noticed that the hair of the animal was turning a flesh color, and presently it looked as though there was no hair whatever, covering the skin, but upon close examination it could be seen that nevertheless it was there, the flesh color giving one the impression that the skin was bare.

"Does the ray have the same effect on the side not turned towards it?" I asked.

"Yes," replied Pembert; "it has the power to penetrate the body, so reaches all parts at once."

I then noticed that the flesh color was changing to a pale pink, and within five minutes it had changed from this to a yellowish hue. At length the organism was reduced to a jelly-like, almost transparent substance, and Pembert switched off the ray and swung the projector back.

"Seventeen minutes and eight seconds," he exclaimed, glancing at his watch. "It usually takes in the vicinity of fifteen or eighteen to transmute a dog. For a man it would take slightly more, while for a frog or a snake, it would take less time. The higher up in the scale of evolution the animal is, the more time is required for the process." He then neatly detached the head, or what had been the head, smiling at me as he did so, and saying: "Probably you would

be more interested in seeing the head regenerated than anything else, as I remember your first question last night was concerning the possibilities of the regeneration of your own."

I TRIED to smile, too, but was so excited, and full of nervous anticipation, that I could manage nothing but a grimace, at which my friend laughed aloud as he tossed the handful of transmuted cells, which had originally composed the head of a dog, into a basin on a near by table. He then inclined the top of the table slightly to one side, and opened the orifice of the tank on the lower side. He opened a similar orifice in the tank on the elevated side of the table, and a flow of liquid was set up, which immersed the organism as it flowed through the tank-like vessel whose bottom served as the top of the table.

"There will be no appreciable change in the appearance of the organism for at least an hour," my friend said, "and the whole process of regenerating the head will not be complete until late this evening; it is not necessary for us to remain here, so we'll go into the library; you will probably be interested in some of my volumes, and I have also some original writings on various biological subjects, which I should be glad for you to criticize and pass upon their suitability for publication, since you are a literary man. We can return here at intervals and note the progress of the experiment."

At the end of an hour we again went to the laboratory to view the organism. It could be noticed that where the head had been detached a slight swelling had begun to appear. Pembert said that by noon there would probably be quite a pronounced bulge, but that until then nothing of interest would transpire, so we again repaired to the library, which was a small room opening off the lab-

oratory, and I continued my inspection of some of my friend's manuscripts.

At twelve we had our lunch and again went into the laboratory. This time there was a pronounced swelling on the neck, and Pembert said that in two or three more hours we could notice the head begin to take shape, which proved to be true. By dinner-time all the head except the snout was formed, and I was beginning to grow excited again, to my friend's great amusement.

"Lord, Pembert," I said, "you don't seem to realize what a wonderful thing this is; you seem to take it so calmly and regard it in so matter-of-fact a way."

"Perhaps it's because I've been associated with it for so long that I've grown accustomed to it," he replied. "I've been working on this for years, so you see that it is matter-of-fact with me by this time; anyway, it soon will be commonplace, and in a year or two will be talked of as nonchalantly as electricity, airships, or any other of the great inventions and discoveries."

After dinner we went back to the laboratory, and prepared to stay until the experiment was completed. I placed my chair close to the table, so that I might watch the experiment more closely and be sure not to miss anything that might be of any interest. Pembert produced cigars and leisurely sat down, saying: "It will take several hours yet, so don't get too impatient, Smith," and after a moment continued: "By the way, do you ever hear of Fraser, or Dobell, or any of those fellows who went to the State University with us? I saw Kenneth White in Chicago, once, and . . ."

THUS our conversation was turned, and drifted from one subject to another, but my mind didn't stray far from the room in which I was seated.

At intervals Pembert would get up

to note the progress in the growth of the snout, and at nine o'clock, when it was about half regenerated, he said that it should be complete by midnight. When the clock had struck the half hour past eleven he arose and brought his chair close to the table. "It should be complete within at least three-quarters of an hour," he said, "so we'll be prepared."

All except the tip of the snout was now complete, and Pembert was closely examining the head under a large magnifying glass. At length he focused it on the snout and waited. After what seemed hours the clock struck twelve, at the first stroke of which I jumped nervously, to Pembert's amusement. To me it seemed that the regenerative process was complete, but my friend made no move, so I waited as patiently as possible until seven minutes past twelve, when he quickly arose, donned rubber gloves and shut off the flow of liquid from the tank which supplied the nourishment for the organism. The fluid drained away into the other tank, and, shutting the orifice in the latter, Pembert righted the slight incline in the table. Then, turning to me, he said:

"How does it look, Smith—complete?"

"It looks exactly as it did after you first transmuted the cells," I truthfully answered.

"Now for the finishing touch," he said, and swung the ray projector into place, focusing it on the top of the table, whereon rested the subject of the experiment. He made the adjustments, and after a moment turned a switch. My heart was pounding excitedly, and I stood up and gripped the back of my chair. Pembert was preoccupied, and I was as well satisfied, for he would have been amused by my excitement.

Presently the body began to take on a yellowish hue, and after about five minutes changed gradually to a pale pink; the pink grew darker, and in ten

minutes had given place to a flesh color, and finally, after a longer time, the hair could be distinguished, and the natural colors began to appear. Then the body stirred and the eyes blinked. Pembert switched off the ray, and pushed the projector back.

"It takes a longer time to bring an organism back to normal than it does for the first transmutation," he said.

The dog appeared to be in a sort of stupor, but, after Pembert had closely examined him, he said that he was perfectly normal, and in a few moments would fully recover.

AS he finished speaking, the animal stirred again, sat up, and yawned, as if awaking from sleep. Then, jumping from the table, he sniffed at my shoes, and nonchalantly trotted out at the door, which we had left open on account of the sultriness of the summer night.

For a while we said nothing, but finally Pembert broke the silence.

"Of course you are aware that it would be possible to regenerate another organism from the original head of the animal, in its present transmuted state," he said, and after a moment added: "It would take a much longer time, of course, probably several days."

"Well," I replied, "I've seen enough for one day, and, if you want to, you may try that to-morrow. but I'm for a walk in the fresh air, and then to bed."

"For my part, I don't feel like any more experimenting to-night," he said, "and a walk would be refreshing, so we'll let things go until to-morrow, anyway."

Every morning, before breakfast, it was customary for Sam to go to a near by village, a distance of perhaps three miles, for a daily newspaper, which Pembert was wont to read during his breakfast. Thus it happened that on

the morning after the day of the experiment, as we sat down to our breakfast, Sam, as usual, brought the newspaper in and laid it on the table. Pembert was engaged in preparing an orange, so I took the paper and leisurely opened it up. The headlines ran:

FAMOUS VIOLINIST MAY LOSE USE OF LEFT HAND

Luigi Boldini, Famous Italian Violinist,
Meets With Unfortunate
Accident

Victim Stricken With Grief—Surgeons
Doing All In Their Power

I read on:

"New York, July 18, 19—Luigi Boldini, the famous Italian violinist who for the past three years has been a resident of this city, met with a very unfortunate accident here this afternoon, when he accidentally caught his heel and fell while descending from his automobile on Fifth Ave. near 104th St., breaking bones in the second and third fingers of his left hand. He was at once removed to Bellevue Hospital, and Dr. H. A. Hadley, famous bone surgeon, was at once summoned to render surgical aid. Signor Boldini is stricken with grief, believing that he will never again be able to play the violin, and Dr. Hadley expresses himself as skeptical as to its possibility, saying that the fingers will probably always remain stiff. Much sympathy is extended to Signor Boldini and a fortunate recovery hoped for."

I PUSHED the newspaper across the table. "Read that, Pembert," I said.

He glanced at the headlines, then picked up the paper and read the article. When he looked up, our eyes met. Both knew what was in the mind of the other.

"Pembert, would it be possible?" I almost whispered.

"I think so," he said.

"But if the hand was not normal, such as his is now, would it not be regenerated in the same abnormal condition?"

"I think not," he replied; "various crustacea, such as the crab, can gnaw off an injured limb and regenerate a perfectly normal one; it is a law of Nature, and I have no doubt but that the same might apply in this case; besides, there has been no part of the hand lost, and when the organ is removed after being transmuted, the defect will be removed with it."

He was growing more excited as he talked; then he seemed to reach a mental decision. "Smith, do you know Boldini personally?" he asked.

"I have been acquainted with him for the last year or so," I answered.

"Well, we're going to New York after him," he announced excitedly. "Hurry up with your breakfast!" And he delved into his orange. At that moment Sam entered the room and, upon being greeted with, "Quick, Sam, some sandwiches and a thermos bottle of coffee," he fled to the kitchen.

We reached Bangor that night and took a Pullman for New York.

Upon our arrival we learned that Boldini was still at the hospital, so we immediately went there. We were cautioned by the nurse to be very careful in our conversation with him, as he burst into tears at the least mention of his injury. She also told us to encourage him as much as possible. Then we were ushered into his presence.

He was propped up in an easy chair, gazing blankly before him, and it could be seen that he had suffered, mentally, if not physically. There were dark rings under his eyes, and his usually pink cheeks were drawn and pale. As we entered the room, the nurse announced:

"Mr. Smith and friend to call, sir," and withdrew.

"**A**H," remarked Boldini, dejectedly, "it is my friend Signor Smith, the writer. You have come to extend sympathy?" He extended his hand, but his customary bright smile was lacking.

"You have my deepest sympathy, Signor Boldini," I replied, grasping his hand. "May I present my friend, Dr. Pembert? Probably he may have something encouraging to tell you."

"Ah, Signor Pembert, it is a pleasure indeed," said Boldini, in his careful English. "Kindly excuse me for not rising, but I am weak, my legs tremble . . . Ah, Signor, I am in deep sorrow; my hand is broken; I shall never again play upon my violin. I am in despair." Tears gathered in his eyes and ran down his cheeks. Pembert looked at me interrogatively, and I nodded.

"Signor Boldini," said my friend, "would it surprise you if I told you that I could heal your hand, make it entirely normal again, all in the course of one day?"

The Italian looked up.

"But the doctors have worked over my hand; they have encased it"—he held it up, showing it in a cast—"but the Signor Hadley tells me that my second and my third fingers will remain stiff, even after the bones have healed. Ah, indeed, my good doctor, I shall never again play my violin," and his voice broke.

"But Signor Boldini," continued Pembert, "my method would be entirely different. I should remove your hand, and grow another in its place."

The Italian regarded my friend enigmatically. "You would remove this, my injured hand, and would replace it with another?" he asked. "Surely, my good Signor Pembert, you speak not in earnest."

"I am sincere," replied Pembert.

"This new hand would have no defects?" inquired the violinist.

"It would, as far as I know, be entirely normal," my friend answered.

Boldini turned to me appealingly. "My good Signor Smith," he asked, "is your friend, the Signor Pembert, indeed sincere in his astonishing statements?"

"I can assure you that he is," I answered.

"Ah, indeed, Signor, I beg your pardon most humbly for doubting your words," he said, turning to Pembert. "If you can indeed perform this wonderful thing of which you speak, gladly will I have it done, although it cost me much pain and all the money which I have." He was about to burst into tears again, but Pembert laid his hand on his shoulder and said:

"Come now, Signor Boldini, you must prepare to come with us. We have a journey to make, and you must have some food to sustain you; you look as though you had not eaten much for a day or two."

"Indeed," the Italian replied, "I have not eaten; I could not, but now that my hand is to be restored, and I shall again be able to play my violin, I shall be all right once more."

THE flicker of a smile crossed his face, and I rang for the nurse. "Signor Boldini is returning home," I told her. "Will you please call a taxi for us."

"This is a very unprofessional thing for me to do," Pembert remarked, as we were driving to a hotel, "but Dr. Hadley will understand in a few days, for by that time I intend to show my invention to the world; until after this I prefer to keep it a secret."

We had disguised Boldini as best we could, and went to one of the cheaper hotels for dinner, as Pembert was

anxious to keep things secret until after the operation at least, and his being seen with the violinist, whose name was now on everybody's tongue, would probably lead to some unwelcome complications.

My friend rejoiced to see the Italian partake of a hearty dinner, which, however, he managed with difficulty, as he was posing as a poor artist, with his injured hand in a sling. Before going to the station, at Pembert's suggestion we called at Boldini's studio, and procured his violin, which we took along, Boldini insisting on carrying it himself, much to Pembert's uneasiness.

We arrived in Bangor the next morning, and, after having breakfasted, set out on our all-day motor trip to Pembert's place. Upon our arrival there, Boldini was greatly fatigued, but nevertheless wanted to have the operation performed that night, to which my friend would not consent, suggesting that he get a night's rest first.

I did not attempt to sleep that night, but sat reading a book until four o'clock, and then crept downstairs and out of doors among the pines. I strolled along across the carpet of needles, watching the stars and waiting for the sunrise, and presently, when I had reached a point behind the kennels, where I could see the rear of the house, I noticed that the laboratory was lighted up, and upon coming closer, and looking in at the window, I was surprised to see Pembert, fully dressed, engaged in minutely going over the apparatus connected with the operating table. The ray projector was close by, and I suspected that he had recently completed an inspection of that also. Upon my entering, he looked up.

"How long have you been here, Pembert?" I asked. "I didn't hear you go down-stairs or I should have gone with you. I haven't slept any, confound my nervousness."

"I've been here all night," he replied.

"I wanted to check up on things and be prepared for the morning, so it seems that the night was the only time in which to do it. Oh, I'm used to working all night," he added, smiling slightly. "I've burned midnight oil plenty of times."

I DID not doubt the truth of this, for I had known him of old.

In another hour he had finished his inspection of the apparatus and, covering it with a sterilized sheet, he straightened up, saying: "Now I'll snatch a nap and then we'll have breakfast. Let Boldini sleep as long as he likes; he'll probably wake early enough." He quietly ascended the stairs to his small bedroom, and I went outside again.

It was now coming dawn, and the tops of the tall pines could be discerned against the sky, which was clear, indicating a fine day ahead.

I strolled along the road, thinking of what was soon to take place and marveling at the wonderful possibilities of my friend's invention. The operation on Boldini would set forth its most valuable practical application and, incidentally, be a very conclusive experiment. Boldini was the genuine musician, willing to risk anything in order to retain the ability to practice his art. He had never asked a question concerning the danger involved, or any other of the details—the knowledge that he would have a normal hand once more, being sufficient to induce him to face the unknown. I marveled at his courage and love for his art.

I returned to the house shortly after seven o'clock, and found Pembert just descending the stairs.

"Boldini is awake," he said, "and will be down presently. Now we'll have our breakfast."

We entered the small dining room and Sam began serving the meal. "Isn't Bol-

dini to have anything this morning?" I asked.

"No, I think it better that he eat nothing," he replied.

At that moment the violinist entered the room, attired in Pembert's bath-robe and slippers. "Ah, good morning, Signor Smith," he said. "Indeed, I am lazy this morning; the Signor Pembert found it necessary to wake me, otherwise I would have slept the entire morning."

"You had better not eat anything this morning, Boldini," Pembert said. "I'd rather you should have an empty stomach."

"Indeed, my good doctor, I could not eat," replied the Italian. "I am that excited that food has no appeal. I can think of nothing but of having my hand cured, or, as you have said, receiving a new one."

YOU understand, Signor Boldini," Pembert explained, "that there will be a certain amount of risk in this, and that you will have to take my word, that as far as I can, I shall not harm you in any way, and shall endeavor, to the very best of my ability, to make the operation a success. My invention has not been given to the medical profession as yet, and I am the only one who has the apparatus, having built it myself; but Mr. Smith can assure you that it is competent to do what I have told you it can, as he has recently witnessed an experiment."

"Indeed, Signor Pembert," replied Boldini, "I doubt not but that you have nothing but the highest motives in endeavoring to do this, and willingly would I risk even my life to have my hand restored."

"I am glad that you feel that way, Signor Boldini," Pembert replied, rising. "We shall proceed immediately, if you are ready."

"I am ready, my good doctor," replied the Italian.

We entered the laboratory, and Boldini looked around interestedly.

"This apparatus is your own invention, Signor Pembert?" he asked, wondering.

"All except some work done on the preparation of the ray projector," Pembert replied, indicating that instrument. "Robert Sill, of Milwaukee, who is now dead, assisted me with that."

"Ah, Signor, if it will but restore my hand, gladly shall I pay anything which you may ask," said the violinist, with emotion.

"We'll consider that later," Pembert said, and then proceeded to explain about the cells of the body, how they were affected by the ray, and how a part of the body may be removed and regenerated, to which Boldini listened fascinatedly.

"And this is what you would do to me, Signor Pembert?" he asked.

"It is, Signor Boldini, if you still feel like undergoing the operation," my friend replied.

The Italian regarded the operating table and the ray projector for a few moments, then raised his injured hand, still encased in the cast, and looked at it, despair written on his countenance. Finally he said:

"Signor Pembert, I realize that I may be taking a great risk when I consent to undergo this, and that I may even meet death, but how much rather would I meet death than never be able again to play my beloved violin! I consent," and tears gathered in his eyes.

"All right, Boldini," said Pembert. "Of your own free will you consent to undergo this, knowing the risks involved. Are you willing to sign a statement to that effect, so that if anything should go wrong, I shall not be held responsible

for it? Mr. Smith is also here as a witness."

"I will gladly sign it," replied Boldini.

Pembert produced the paper, and he signed.

After the cast had been taken from his hand, Boldini removed his bath-robe and slippers, and stretched himself on the table, showing no signs of nervousness whatever. As Pembert swung the ray projector into place, he closed his eyes. The switch clicked, and my friend bent over eagerly. "He appears to have gone unconscious immediately," he remarked.

QUEER sensations coursed up and down my spine, as I watched the body of the great violinist turn to a deep flesh color, almost red, which eventually merged into a pink; the pink gradually faded and gave way to a yellowish hue. Then the stage in which the body appeared almost transparent was reached, and I heard the click as my friend turned the switch. He pushed the projector back. "Nineteen minutes and fifty-one seconds," he remarked. "It functioned perfectly."

"This is certainly a strain on my nervous system," I said, dropping into a chair. "I hope I don't have to witness many more of these fantastic processes."

"You'd soon become inured to it," said my friend, with a short laugh, as he neatly detached the left hand at the wrist, after which he opened the orifices in the tanks on either side of the table, and slightly inclined the latter in the correct way, which set up the flow of nourishing liquid.

By lunch time a pronounced swelling had appeared at the end of the wrist, and Pembert was greatly satisfied with the progress of the regenerative process. "Everything points to success," he said.

In a few hours the hand had begun to take shape, and we spent most of the afternoon in the laboratory. By dinner-

time all but the fingers were formed, and the thumb had already started, so, after we had dined, we went to the laboratory to await the completion of the process. "It should be completely regenerated shortly before midnight," Pembert remarked, bending over and looking closely at the new-forming organ.

Some time around eleven o'clock Pembert stepped into the library. He returned back with Boldini's violin case under his arm. "I thought I'd have it in readiness," he said, with a slight smile.

By this time I was beginning to feel nervous, despite all my mental efforts to remain collected. Eleven-thirty found me standing gripping the back of my chair, and Pembert studying the tips of the new-formed fingers under his magnifying glass. He remained thus for about five minutes, then suddenly he straightened up and shut off the flow of liquid in which the body was immersed. "Everything has functioned perfectly, so far," he remarked, as the liquid drained away.

MY heart was thumping so that I scarcely heard the click as he turned the switch; and then, as I watched, the yellowish hue began to permeate the body. It must have taken nearly half an hour for the Italian's body to pass through the various stages up to flesh color, but finally the natural hues began to appear, and the hair to turn its natural black. I instinctively moved closer in my excitement, and presently Pembert switched off the ray.

Boldini appeared to be in a sound sleep, but as my friend swung back the projector he stirred and sighed slightly. Pembert was bending over him with a glass of stimulant in his hand, and, as he stirred again, he lifted his head and forced some of it through his lips. Presently his eyes opened and he gazed blankly at Pembert bending over him.

As the stimulant again touched his lips he tried to sit up, but fell back again as if overwhelmed with drowsiness.

"He'll be all right presently," said Pembert with a satisfied air. "His condition seems to be perfectly normal." At that moment Boldini opened his eyes again, blinking several times, and finally sat up and looked around the room, as if collecting his thoughts.

"How do you feel, Signor Boldini?" my friend asked anxiously. The violinist held up his left hand, and moved the fingers, one after the other.

"**A**H, my fingers!" he cried joyfully; "they are perfect. My violin—bring me my violin!" And he clambered from the table excitedly. Pembert took the violin from its case.

As Boldini cuddled the instrument under his chin, tears ran down his cheeks and he impetuously broke out into Italian, murmuring lovingly, as it were, to his violin. Then he touched the strings with his bow, and it seemed that joy itself was set free at that moment. His fingers glided and danced over the strings, and his bow brought forth music of which I had never heard the equal, although I had listened to many an artist.

Pembert was a lover of music, and sat listening, his eyes intent upon the face of the Italian, and his hands clasped over his knees. With his eyes half closed, Boldini played on, changing from theme to theme, and finally stopped.

"Ah, my good Signor Pembert, what can I do to repay you for what you have done for me?" he cried, in a burst of emotion. "Gladly will I surrender to you anything it is in my power to give. What do you ask of me, my good doctor; how may I reward you?"

"Your music, Signor Boldini, is ample recompense," Pembert replied.

THE END