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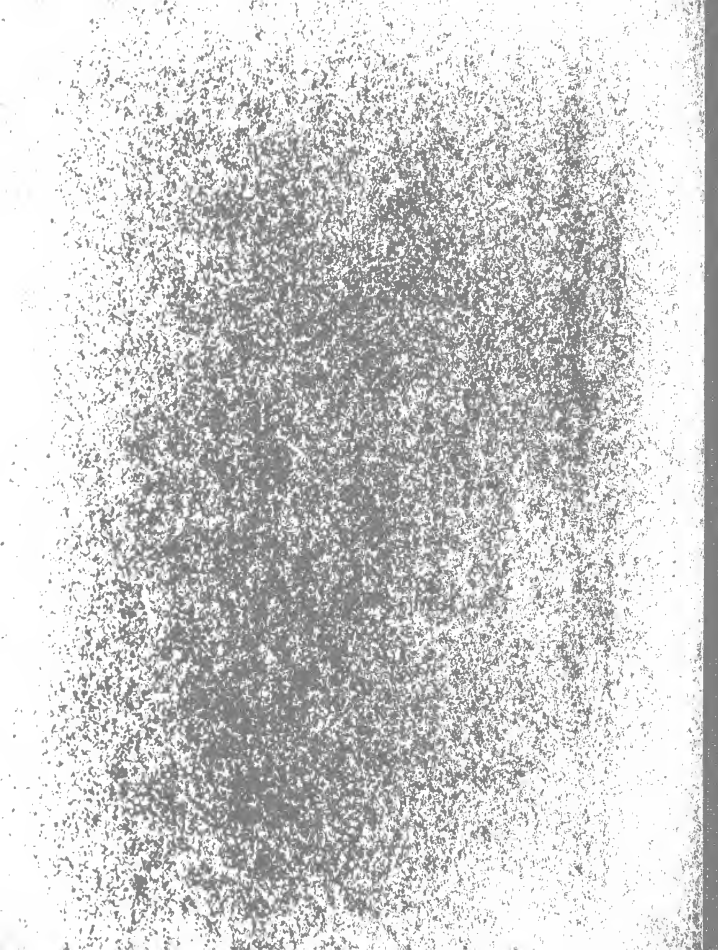
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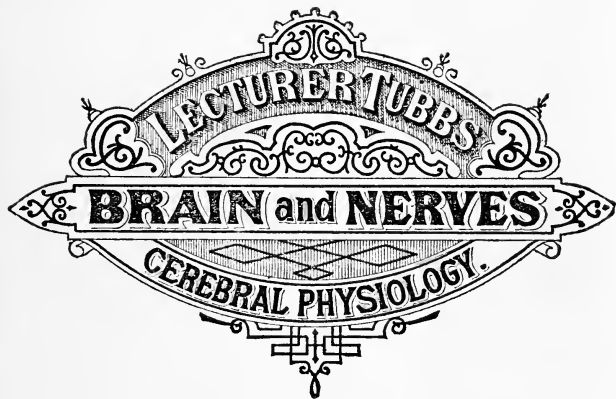
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LECTURER TUBBS

BRAIN and NERVES

CEREBRAL PHYSIOLOGY.



THE MASKED PARTY AT THE BIDDLEWICKER'S.
[See Chapter VIII.]

SCIENCE IN STORY

SAMMY TUBBS,

THE
BOY DOCTOR
AND
"SPONSIE,"

The Troublesome Monkey.



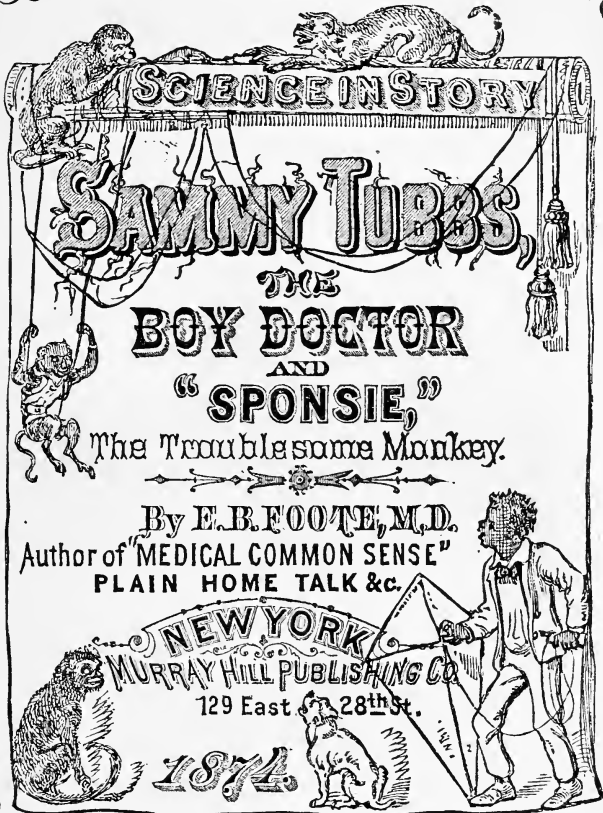
By E. B. FOOTE, M.D.
Author of "MEDICAL COMMON SENSE"
PLAIN HOME TALK &c.

NEW YORK
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VOLUME IV.



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NEW YORK

CHAPTER I.

THE LECTURER TUBBS.



F no one of my impatient or mischievous readers has touched the secret spring to which reference was made in closing the last volume, then circumstances must have done so, for here I am again, and loaded down, too, with news, like the small boy under your window, crying, "'Ere's the 'Erald,

Tribune, Times, and World!" First let me tell you that there is a large handbill posted about the streets which announces that Doctor Samuel Tubbs will deliver a lecture at the Johnson Dispensary on Twenty-seventh Street, on the evening

of the 7th of January, at eight o'clock. Subject,
THE BRAIN.



SAMMY'S HANDBILL.

Sammy himself knows nothing of this poster yet, but I can tell you who does—Doctor Winkles. He is closeted at this moment with his particular

friend, Doctor Hubbs, talking the matter over. The boy knows that he is engaged to lecture, for he promised his old friend Mr. Johnson that he would do so on the subject and night already named, but he has not the slightest knowledge of the fact that the lecture is advertised in all that portion of the city bounded by Twenty-third and Forty-second Streets, Broadway and Ninth Avenue, excepting, mind you, the route which Sammy always takes in going back and forth between the Doctor's and his Twenty-seventh Street home. Old Mr. Johnson, fearing that the handbill might make the young lecturer feel that he had undertaken too much, directed the little colored boys who gratuitously posted the announcements, to avoid the blocks which Sammy frequented.

The little practitioner is at this very moment at the Dispensary attending as usual, during the morning hours, to his patients, while Doctor Winkles has taken advantage of his absence at this time in the day from the office of his employer, to see Doctor Hubbs about the announcement of the lecture.

Doctor Winkles is again astonished that Doctor Hubbs should allow the "old fool to make a young fool of Sammy."

Doctor Hubbs protests his innocence and even ignorance of the whole matter. He is very much surprised that Sammy should have undertaken such a thing without consulting him, but he is inclined to believe that the boy will prove equal to the emergency.

Both gentlemen conclude that it is too late to interfere either to prevent the lecture, or to give the young lecturer any assistance, for, according to the date announced, it is to come off this very evening.

"I want to attend," said Doctor Winkles, "and see what the presumptuous young fellow will do. I'll bet you anything he will utterly break down if there should be many people present, white as well as black, for there is nothing in the poster that says that the lecture is intended for colored people only."

"Don't you go!" exclaimed Doctor Hubbs, with decided emphasis. "Your presence alone would have a worse effect upon Sammy than a

room full of people. He certainly would break down if he should see your critical eyes behind those well-known glasses. Surprised as I am that the boy should go headlong into anything like this without advising with those whom he has reason to regard as his best friends, I know of no punishment that would be more cruel than for you to intrude your presence there. Now, Winkles, do you stay at home, unless professional business calls you out; and if called, see to it that your unconquerable curiosity does not take possession of you before you get back, and, when back, turn the key in your door, with yourself on the right side of it."

"But everybody is invited to attend," insisted the persistent Doctor Winkles. "He must have known that we should probably see the posters, and that if we did we should likely be among his listeners."

"Well, well!" rejoined Doctor Hubbs, entirely out of patience with his old friend, who seemed ever ready to put Sammy under some new torture; "if the boy wanted either of us there, we should have received ere this a direct invitation. Perhaps the very reason he has kept so still about

it is because of the fear that you might attend, Winkles. I did not think of it before, but I am inclined to believe that this is the real cause of Sammy's silence. He remembers how mercilessly you pursued him when old Mr. Johnson put up a sign



bearing his name. Very likely he, too, has been pressed against his own modest convictions into this new enterprise, and has decided to try it once before speaking of it to either of us, trusting that we will be too much taken up with our own professional labors to stop still on the sidewalk and read handbills on the

THERE ARE MR. GRUNDYS. fences. And I must say now," continued the visibly excited man, "that I do not believe I should have seen those posters if you had not called my attention to them. Let us not talk any more in derision of meddlesome old maids and gossiping Mrs. Grundys, for there are

no more such characters among women than there are among men."

Doctor Winkles felt not a little cut by this remark, and a forced laugh broke from his lips as Doctor Hubbs concluded. "Then you think,"

said the former, taking up his hat to leave, "that it is not the fair thing for us to go around there to-night? I frankly confess that I cannot view the question in the same light that you do. When a person is going to lecture, and announces it with flaming handbills, I am stupid enough to take it for granted that



AS WELL AS MRS. GRUNDYS.

he wants every one who can to attend." Saying this, the visitor walked towards the door, while Sammy's true friend and apologist, returning to a persuasive tone, made a last appeal to Doctor Winkles to stay away from the Johnson Dispensary on the occasion of the

boy's first appearance as a lecturer. "Give the rash lad a reasonable chance," he added.

Although his professional friend stood out to the last in not committing himself, Doctor Hubbs returned to his office-room, at the conclusion of the interview, feeling quite confident that his appeal would be heeded. While he sat there alone, thinking the matter over, in walked Sammy looking as unconcerned as if he had nothing but his usual duties on hand for the coming evening.

"Remarkable youth!" exclaimed the Doctor to himself in an undertone, not intending to be heard, after watching the boy's movements for a few moments.

"Did you speak to me?" inquired Sammy, turning suddenly from the bookcase, in which he was replacing Scudder's "Theory and Practice," which he had brought home with him from the Dispensary.

"No, I did not, but I want to," replied the Doctor. "Are you going to deliver a lecture to-night on the subject of the Brain?"

It was well that Sammy had put the book away before this inquiry reached his ears, or he would cer-

tainly have dropped it, so greatly was he overcome with both surprise and embarrassment. Finally rallying a little, he said, in a hesitating manner, "I am, to please Mr. Johnson, going to give a kind of conversational lecture. I don't know how I shall make out, but to gratify him I thought I would just try." The boy at once took it for granted that the Doctor had seen Mr. Johnson.

"Then why announce it in posters, if it is only an experiment?" asked the considerate man.

"Posters!" gasped the terrified Sammy; "why, what do you mean, Doctor Hubbs?"

inquired the still further surprised boy, who was instantly seized with the suspicion that perhaps old Mr. Johnson had caused the lecture to be advertised. "I know nothing of any posters."

"Is it possible, Sammy, that you do not know



THE SURPRISED SAMMY.

that you are advertised on the fences, empty barrels, and all the old buildings, to lecture to-night?"

"I am sure I did not," replied Sammy, for the moment more fearful of having offended his kind preceptor than of making a failure of his promised effort. Almost too frightened to articulate, he then proceeded in broken sentences to explain just what had passed between himself and old Mr. Johnson in regard to this matter, remarking that his instructions to his evening class had recently taken so much the character of informal lectures, that he had reluctantly consented to have it circulated, a little more publicly than it had been done before, that he would deliver a lecture on the evening appointed. "But," he stated, "I have not been consulted about the issuing of handbills, nor did I know of their existence. I only expected that the occasion would be advertised by word of mouth among my colored friends."

"I suppose then you have written out what you propose to say about the brain," remarked the Doctor in an inquiring tone, after expressing his dissatisfaction with the strange course pursued by old Mr. Johnson.

“ I have not,” frankly answered the boy.

“ Why, Sammy ! Sammy ! ” exclaimed the Doctor with astonishment, “ you and your old colored friend must both of you be confirmed lunatics ! Then you propose to stand up there after you have been announced in a most public manner, and speak without notes or preparation, do you ? ”

A smile lit up the blanched lips of the boy in view of his preceptor's solicitude, as he replied : “ The rooms with sliding-doors thrown open can hold not more than fifty people, if they can as many. I have,” he said, “ already talked to over thirty persons at a time on some evenings.” Sammy also expressed it as his opinion that there would not be many white folks there, as hardly anybody knew about Doctor Samuel Tubbs excepting the colored people of his immediate neighborhood.

“ What if Doctor Winkles should attend ? ” interrogated the Doctor in a way to awaken Sammy to a sense of the position he would occupy before his class if questioned by this unsparing critic.

“ Goodness gracious ! I didn't think of that ! ” exclaimed the lad, dropping into the first chair as if his muscles had given out. “ Do you suppose,

Doctor, that he has seen the posters?" asked the boy with an expression of painful anxiety.

"Indeed, he has, and he has been here this very morning to see me about them," answered the still anxious preceptor, who took so much pride in his pupil that any misstep on the part of the latter was felt as keenly by the one as by the other.

The Doctor then told Sammy all about the interview, and it was decided that all leisure moments from that hour till eight o'clock should be spent in studying the brain, so as to be prepared for the "everlasting questioner," should he be present.



CHAPTER II.

NEARLY EIGHT O'CLOCK—CROWDS IN FRONT OF SAMMY'S HOUSE—THE DOCTOR AND SAMMY ENTER BY A BACK DOOR—DR. WINKLES THERE IN DISGUISE—DR. HUBBS INTRODUCES HIS PUPIL—THE YOUNG LECTURER EXHIBITS GREAT SELF-POSSESSION—SPONSIE OCCASIONS THE SENSATION OF THE EVENING—THREATENED RIOT!



DENSE crowd of boys, girls, and grown folks of all complexions, from the purest white of the Caucasian to the darkest skin of the Ethiopian, met the gaze of the Doctor and Sammy as they turned the corner of the block wherein was located what had come to be known among the

colored people as the "Johnson Dispensary."

Sammy's true friend and adviser had determined to accompany the boy and see him through what seemed like a most foolhardy adventure.

"See there? See there?" nervously repeated the Doctor in a tone partaking both of exclamation and interrogation. "Do you see how they are crowding up the steps?"

Sammy felt not a little trepidation himself, but made up his mind to conceal it, if possible. Waiting for a moment to be sure that his throat would not prove nervously treacherous and interrupt his utterance, he said calmly:

"Well, Doctor, let them crowd. You can put but a pint of pea-nuts into a pint cup, and those rooms will only hold two rooms full of people."

This affected self-possession on the part of the youth greatly surprised the good man as both himself and pupil now began to elbow their way through the outer circle of the throng. Finding it impossible to reach the steps in that direction, Sammy conducted his preceptor through a narrow alley to the rear of the building, where they were enabled to enter the house by a back door.

Sammy was instantly met in the hall-way by old

Mrs. Tubbs, nearly scared out of her wits. "De rooms is chuck full," she said. "All de chars from de kitchen an' de bedrooms an' all de white-wash pails is full ov young uns an' old ones. Yur foder hab gone to fotch up de wash-benches."

"You had better close the doors at once, Mrs. Tubbs," replied the Doctor, showing quite as much agitation as did the old lady. "Tell the people outside that the house is full. Wait a minute," added the Doctor, hesitating a little—"perhaps I may better do it." He then elbowed his way through the crowd that packed the front hall-way, and, reaching the steps, he said :

"On behalf of the young man, Master Samuel Tubbs, I heartily thank you for the kind interest you have manifested in him and in the subject upon which he proposes to lecture. But I am compelled to express both his and my regrets that the house will not accommodate you all. There are already as many inside as can possibly gain admission. Perhaps you may have an opportunity to hear him at some future time, if your friends who are present to-night shall be sufficiently entertained to speak well of the performance." Saying

this, the Doctor gracefully waved his hat, and, stepping inside, closed the outer door and turned the bolts.

A murmur of dissatisfaction was heard from



DOCTOR HUBBS SPEAKS TO THE CROWD OUTSIDE.

without, and some rather rough language from those who were doubtless attracted to the spot through simply curiosity. But gradually the people outside one by one reluctantly withdrew, until, within the course of fifteen minutes, all was

quiet except the rustling of dresses, occasional moving of the feet, or a half-suppressed cough from those having defective breathing-organs. To both the Doctor and his pupil the silence and the apparent gravity of the occasion were painful.

“Who are present?” Well, on a platform a little raised at the end of the back room are seated the young lecturer and his preceptor—the former looking a little less composed than usual, and the latter as pale as if he had but just recovered from a severe fit of illness. In chairs near the sliding-doors are Mrs. Millstone and her friend Mrs. Biddlewicker. The Doctor and Sammy make a nod of recognition to them, and look nervously about to see if Doctor Winkles is present. “He is not here,” whispers Sammy to his anxious friend. “I am very thankful,” responded the latter in an undertone.

Now, don't one of you say anything about it. Let “mum” be the watchword now as on a former occasion which my young readers all remember.

The man of “unconquerable curiosity,” Doctor Winkles, is present, and he has been mean enough

to blacken and mask his face, and put on a curly black wig, so as not to be recognized. He sits in the front room, and is partially hidden from those on the stage by the projection which forms a part of the sliding-door on that side. But if he were directly before them they could not possibly detect the trick, so perfect is the disguise.

Old Mr. Johnson has just entered by the back way, and is invited to take a seat on the young lecturer's left, the Doctor being seated on the right. A few pleasant words pass between Doctor Hubbs and the old man, the former having decided to make the best of what looks like a wild procedure.

Of course old Mrs. Burtell, Young Diggles, and others of Sammy's evening class, came early enough to secure seats, and all of them appear as if greatly elated to find themselves in such distinguished company.

Standing in the hall and door-ways of each room are Sammy's father and mother, brothers and sisters, all perceptibly affected with mingled emotions of pride and anxiety. They fear, like the Doctor, that Sammy has undertaken more than he can carry through. None of the boy's

intimate friends and relatives, indeed, feel confident excepting old Mr. Johnson, who sits erect in his chair with his hands resting carelessly upon the gold knob of his cane and his head somewhat thrown back, viewing with great satisfaction the results of his handbill advertising.

Presently Doctor Hubbs rises and calls the meeting to order. In tremulous tones he briefly traces the interesting career of Master Sammy thus far, and prophesies for him, if his life is spared, an honorable and useful future. As he proceeds, the audience is so greatly affected that there is not a dry eye in the room. Even the complacent old Mr. Johnson is seen to press back with his handsomely embroidered handkerchief the tears which force their way to his large, generous eyes. In conclusion Doctor Hubbs begs the kind indulgence of those present while listening to Sammy's first attempt as a lecturer, and expresses the hope that if the young man fails to interest them on this occasion he may meet with better success at some future time, when, with more careful preparation, he will be able to stand with greater confidence before them in the capacity of a speaker upon sub-

jects which have more or less baffled the wisdom of our most distinguished scientists. "I have the pleasure," he adds, "of introducing to you one who is familiarly called by my venerable friend upon my left by the name of—Doctor Samuel Tubbs."

As Sammy arose there was the wildest clapping of hands by all present, including the disguised Doctor Winkles, who already began to feel mortally ashamed that he had imposed himself upon so respectable a company under cover of burnt cork, a mask, and a wig of artificially crisped hair.

When the applause subsided, Sammy advanced, bowing, to the front of the rude platform, and, in a tone of wonderful self-possession, said:

"MY FRIENDS:—I have no apologies to offer for appearing before you to-night. All that are necessary have been feelingly given by one to whom I am wholly indebted for all the knowledge I have obtained of anatomy and physiology. To my humble parents over there I owe my feeble beginning—to my preceptor belongs the credit of awakening within me a love of study—to my venerable friend on my left I am indebted for the

material comforts that surround my father's family, and to him you are indebted for whatever pleasure



SAMMY'S FIRST EXPERIENCE AS A LECTURER.

or profit you derive from my evening school at this place—while to an All-wise Providence we are all indebted for those unseen tides and currents

which silently bear us along on the unknown stream of life to whatever success we may by generous accident or honest endeavor attain.

[Applause, in which both Doctor Hubbs and his friend Doctor Winkles join.]

“Life itself is a wonderful mystery. Yet all of life is not a greater phenomenon than is this one organ which I am using here to-night,” placing his hand gracefully upon his forehead, as all again clapped their hands.

“The Brain—what is the brain? Our greatest students do not know yet! Then why propose to lecture upon the Brain? I’ll tell you,” said the speaker with a roguish twinkle in the eye and a humorous parting of the lips which revealed a still deeper twinkle, for his teeth glistened like living pearls. “I once heard Prof. Alexander Wilder say that when you want to write an essay or deliver a lecture, choose for your subject something you know nothing about!

[Great laughter and applause. Doctor Hubbs’ countenance by this time showed that much of his anxiety had departed. The Tubbs’ family looked proud and delighted. Old Mr. Johnson cast his

eyes triumphantly over the audience and shook his fat sides. And Doctor Winkles joined in the applause and merriment, but would gladly have given his check at that moment for fifty dollars if he had only left his wig, mask, and burnt cork at home.]

“Scientists find,” resumed the young speaker, uttering his words with great distinctness, and throwing in a graceful movement of the hand when the subject invited it, “that the brain is made up of Albumen, seven parts; Cerebral fats, a little over five parts; Phosphorus, one and one-half parts; Ozmazome, one part; Acids, salts, and sulphur, a trifle more than five parts, and a substance so common as the water you draw from the Croton reservoir in the city or from your wells in the country, eighty parts.

“What does all of this signify? It is well to know it, and it is a credit to chemistry to have found it out; but who among you can put these things together and in their true proportions, and make a human brain? If any of you can, there is water enough in the park reservoir, if you will but collect together the small percentage of the other

materials, to make several millions of brains as large as Daniel Webster's and as wise and generous as that of our lamented Lincoln; for bear in mind the brain is mostly composed of water, as indicated by so large a percentage as eighty parts in a hundred.



SAMMY AS HE LOOKED WHILE
SPEAKING.

[Rapturous applause before the conclusion of the sentence; shaking of hats, and handkerchiefs, and stamping of feet on the mention of the last name, so dear to the colored people.]

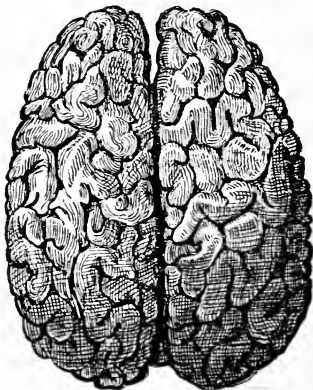
“But our scientists have, nevertheless, progressed a little further than merely to find out what the brain is made of,” said the young lecturer in a conversational tone after the applause ended. “We are mainly indebted to Gall and his pupil, Spurzheim, for first questioning the brain as to its peculiar organs and functions. Sufficient credit has never

been awarded by those who have profited by his discoveries to Gall, the distinguished phrenologist, who first discovered the true structure of the brain ; nor yet to other writers and investigators in the same field who have been frank enough to avow themselves believers in phrenology, such as the late George Combe and William Byrd Powell, and Professor J. R. Buchanan, and the physiognomist Redfield ;—all of whom have contributed valuable truths to the current literature of the day, thereby laying stepping-stones for the feet of other scientists who have been more fortunate in extending their reputation.

[Doctor Hubbs, who was a great admirer of Byrd Powell and Professor Buchanan, clapped his hands at this point, and the applause soon spread throughout the audience.]

“Lately,” resumed the young lecturer, “much has been said about two brains. What is called the cerebrum, that is, the front and upper brain, has two hemispheres, or, in other words, two parts, one on the right, and the other on the left side, resembling each other in structure. Some thirty or more years ago a doctor by the name of Wigan sug-

gested that either of these parts might do all the thinking for any one person. More recently Doctors Brown-Séquard, T. S. Lambert, and others have called the people's attention in popular lectures to the same subject. Anatomy sustains the views of



THE TWO BRAINS WHICH DO OUR THINKING.

these gentlemen, as I will presently show." Here the young lecturer hung upon the wall a picture showing the brain as it would appear if you should remove the skull, and from a place above look down upon it.

“The division which is seen at the top of the brain extends down to what is called the corpus callosum, a flat band composed of a wonderful network of nerve-fibres, like so many fine telegraph-wires, which doubtless serve to communicate intelligence between the two sides, or the two brains.

[“Wonderful! sir; perfectly wonderful! sir,” exclaimed old Mr. Johnson, rising from his seat and viewing the plate, which Doctor Hubbs had loaned to Sammy for the occasion. At this juncture all in the two rooms arose, and, with eyes straining over each other’s shoulders, tried to get a good view of the plate. Doctor Winkles, to avoid suspicion, appeared even more anxious than the rest to see the picture, with which he was as familiar as he was with the glasses upon his nose. Finally those who arose from their seats one after another settled down again, and Sammy resumed :]

“Doctor Brown-Séquard says that the reason some people have so much trouble in making up their minds, is because these two brains in one person sometimes think differently upon the same subject. We all know that there is not as much

difficulty in getting two people of equal intelligence to agree upon some point in dispute, as when one is intelligent and the other is ignorant. Well, Doctor Brown-Séquard says that we do not educate these two brains alike; that to do so we should use our left hand as well as our right. When we use our right hand we are mainly using the left hemisphere of the brain, and when we use the left hand we are mainly using the right side of the brain. The reason of this is that many of the nerves entering the body from the brain cross each other at a point where the spinal column swells into the medulla oblongata, in the under part of the brain, so that the right side of the brain has telegraphic communication with the muscles of the left side of the body, and the left side of the brain with the muscles of the right side of the body."

[“ This, sir, is very interesting—very interesting, sir!” exclaimed the enthusiastic Mr. Johnson so loudly that he could be heard in every part of the two rooms.]

Sammy here took advantage of the interruption to refresh himself with a glass of water, which one

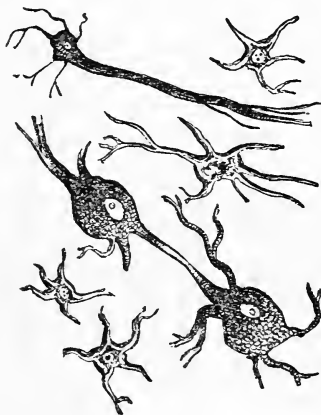
of his proud little sisters brought to the table only a few moments before.

“At a recent lecture by Stephen Pearl Andrews,” resumed the encouraged boy-orator, “the speaker alluded to the right hemisphere of the brain as being the feminine side, and remarked that we should never reach true mental development so long as we failed to recognize and call into full play the right hemisphere of the brain, any more than we can have a well-organized society so long as the feminine half of the people constituting it is limited in its development and sphere of action.

[This occasioned great clapping of hands by the women present, led off by Mrs. Millstone and Mrs. Biddlewicker, which applause was soon caught up by the masculine portion of the audience as well, sounding like a loud echo to the first.]

“The brain is composed of cellular matter (that is, matter with little cells in it) of a gray color, and of little white fibres or strings something like what is presented in the two plates I hold up before you, and the surface of each hemisphere presents numerous convolutions, or, in other words, waving rolls of substance. Now, Dr. Broadbent informs us that

the left half of the brain, which is the most used, contains a greater amount of gray matter and more convolutions than the right half. Inasmuch, then, as the gray matter is the reservoir if not the producer of nerve-force, and the convolutions are for



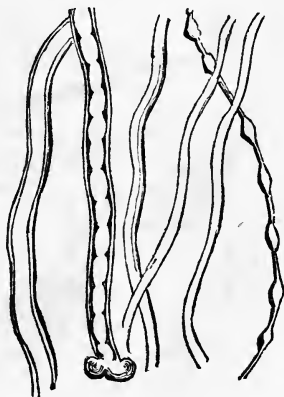
the purpose of giving greater surface for the gray matter, we certainly see that for some reason our left brain is a smarter fellow, so to speak, than our right brain. And it is not strange that two such unequally developed chums do not always get along harmoniously together, as illustrated

CELLULAR MATTER OF THE BRAIN. when people are said to have two minds—not to know what they want themselves, to be vacillating, etc.

[At this good point the old gentleman on the platform brings down his cane in a succession of hard raps on the table, and all join in the applause.

Old Mr. Johnson never looked so happy in his life before.]

“ Doctor Lambert,” said the young lecturer, “ thinks we ought to be able to use the two brains at the same time and for different purposes, and that most of us do whether we know it or not. He even claims that we should be able to give rest to one hemisphere by putting it to sleep while the other is acting the part of sentinel and worker, and then change off, and so, with two hands alternating at the double-thought machine, do two men’s work in a given space of time without seemingly taking rest. He says he can and often does. [Applause and laughter.]



THE NERVE FIBRES OF THE
BRAIN.

“ Doctor Lambert further tells us that our first impressions upon any given question are generally the most correct because they proceed from the

most active and best brain of the two hemispheres. That if a controversy has been conducted for a time between the right and left half, the most active one generally prevails, so that the first impressions are finally accepted and our conduct governed accordingly. Often when a person becomes somewhat undecided and is swayed by the suggestion of the weaker half, he finds he has made a mistake, and that he might better have acted in compliance with his first thought. [Applause again, with laughter and an emphatic "That's so, sir," from old Mr. Johnson, who drops his head and looks wisely over his glasses at the audience before him.]

"In conclusion," added the lecturer, "I will say that if the gentlemen quoted are correct in their views, it is manifestly our duty to educate both hemispheres of the brain. It is thought that the exercise of the left arm and leg will cause a larger supply of blood to go to the right half of the brain, while the movements which they make under the direction of the right hemisphere will impart greater mental activity and growth to the latter. The advice of these scientists is therefore that you show no partiality to the right arm or leg, but give an

equal chance to the left arm and leg in all that you do with your hands and feet.

“ Now,” remarked our young speaker, as he retreated to the back of the platform, “ if any one has any questions to ask, I will, so far as I am able, answer them.”

As Sammy sat down, there was a perfect uproar of applause from feet and hands, old Mr. Johnson rising from his seat in the effort, while the countenance of Doctor Hubbs looked as if a fatter and healthier man had slipped into the place of the one who had occupied the same chair at the beginning of the exercises. As the Doctor and the old gentleman, reaching across the platform behind Sammy's chair, shook hands of congratulation, they were moved somewhat suddenly again to their places by a voice from the audience asking :

“ Doctor Tubbs, sar, du de narves I feel wid as well as dem I moves in walkin' cross ober at what you calls de madulli oblongarti ? ”

[This was Doctor Winkles, disguising his speech as effectually as he had done his person.]

“ No,” replied Sammy, not rising from his chair, “ the crossing of the nerves which control motion

takes place at the medulla oblongata ; but the nerves with which we feel cross each other throughout the length of what is called the spinal cord. The crossing of the nerve fibres or filaments in the way I have described is what is technically called

the decussation of the nerves."

The whole Tubbs family smiled when Sammy made use of this big word, and one of the younger sisters nearly crammed her handkerchief into her mouth when she saw Sammy looking at her. The attention of all was again attracted to the strange colored man, who addressed another question to the young lecturer as follows :

“ How big am de hemispheres ob de brain as you calls um ? ”

“ Doctor Dalton tells us that they constitute



THE YOUNGER SISTER.

about nine tenths of the brain," replied Sammy, still sitting.

"S'pose you cut dem ar hemispheres all 'way, what would 'come ob a fellar?" again inquired the disguised doctor, whom all supposed to be a colored person.

"You remind me," said Sammy, coming forward upon the platform with a bland smile, "of a white friend of mine named Doctor Winkles; still I will answer your question so far as I myself know. The same authority I just before quoted tells us that they may be removed without caus-



THE DISGUISED DR. WINKLES.

ing the loss of the senses, power to move, etc., but that memory will be destroyed, will be rendered inactive, and the power to form mental associations lost. The experiment, I am inclined to think, has never been tried upon man; probably

my friend over there who asks the question would not like to have it tried upon him [laughter], but the effects of disease on the hemispheres of the human brain are quite the same. There seems to come on, gradually, loss of intelligence, memory, and judgment. But with the vegetative nervous system undisturbed, a healthy man having the hemispheres removed would very likely live as long as food could be introduced into his stomach and air into his lungs,—live indeed like a vegetable, a tree, or a cabbage.” [Applause.]

“ You tole us dat de front an’ upper part of de brain is called de Cebrium. What you call de back brain,” asked the strange man.

“ I said,” replied Sammy, “ that the front brain was called the cerebrum ; in answer to your question I will inform you that the back brain is called the cerebellum, and, to answer in advance what would probably otherwise be the next question, I will tell you what it is supposed to be for. Flourens, a noted physiologist, thinks it possesses the power to co-ordinate or regulate those movements which we intentionally make with our hands, feet,

or other parts which are under the control of our voluntary nerves."

Everybody stared at the strange man as Sammy was answering the question, and clapped their hands when the latter concluded.

Old Mrs. Tubbs turned to her husband and asked, so loud that nearly everybody in the two rooms heard her—"Who's dat man dat tink he knows so much? I neber see um here afore."

"Gess he's canal-boat cook or chimney-sweep," answered old Mr. Tubbs, with a chuckle.

"What's dat dulla oblon garter you spoke 'bout?" asked the strange man, speaking again notwithstanding he heard the criticism passed upon him by the elder Tubbs.

"The medulla oblongata contains the pneumogastric ganglion, which is sometimes called the 'vital point,'" replied the young lecturer, still able to keep up with what he supposed to be a second Doctor Winkles, not for a moment mistrusting that it was Doctor Winkles himself. "Physiologists tell us," Sammy went on to say, "that the removal of this knot would so affect our breathing-organs that respiration would instantly stop. In

other words, to remove it, or I may even add, to prick it with any sharp instrument, would cause instant death." [Applause.]

When Sammy concluded speaking, and while the applause which followed was going on, Doctor Hubbs reached over to old Mr. Johnson and inquired of him if he knew who that colored man was. Mr. Johnson shook his head, saying: "Really, sir, I do not know, sir; he seems determined to learn all he can, sir; that's right, sir; Doctor Samuel Tubbs, sir, can answer any question he can ask, sir; rely upon that, sir." This last sentence was uttered with decided emphasis and a confident shake of the head.

At this moment Sponsie came bounding into the room from an upper apartment, from which he had escaped through the carelessness of some one. First he paid his respects to Doctor Hubbs, by jumping into his lap; then to Mr. Johnson, by leaping upon his shoulder. This little act was not on the programme of the evening's exercises, but it greatly amused the people, especially when he took the old gentleman's spectacles from his nose and put them on his own. Espying Mrs. Millstone,

he dashed aside the glasses as carelessly as if they had been made of steel, and went leaping forward to where that lady was sitting.

Doctor Winkles, seeing that the monkey seemed bound to pay his respects to everybody he had ever met before, became nervous lest his identity might in some way be revealed, and arose from his chair to go, when by one monstrous leap Sponsie alighted upon his shoulder.

“Why, Sponsie knows that 'ere man!” exclaimed old Mrs. Tubbs.

“He do, sartinly!” echoed old Mr. Tubbs.

Meanwhile Doctor Hubbs and Sammy were intently watching the familiar attention which Sponsie was bestowing upon the stranger while the latter was making his way as fast as he could through the crowd with Sponsie clinging to his back.

Suddenly, when the strange colored man was in the very middle of the front room where every soul could see him, Sponsie seized his wig and mask, and struck an air line over everybody's head and shoulders to the platform.

Poor Winkles! there he stood in his Caucasian locks, revealing their true character, if they were

a little curly. And then he had failed to blacken all the upper part of his forehead, which had been covered by the wig! He would have been willing now to draw his check for a couple of hundred



THE REAL MAN BLOSSOMS OUT.

more to have been translated from the home of the Tubbs to his own room!

Some of the rougher of the young colored men were so enraged that a white man should have treated the occasion as if it were a masked ball,

that they shouted tumultuously, "Put him out! put him out!" and even commenced using violence by seizing him by the collar and neck. But both Doctor Hubbs and Sammy, discovering who it was, rushed to the spot, and by their interference saved him. The Doctor was gently releasing their hands from poor Winkles' coat and neck, while Sammy bent over him much as the Pocahontas of colony times shielded the imperiled Smith. Meanwhile Doctor Hubbs proceeded to make the best explanation that was possible under the circumstances.

The moment Doctor Hubbs loudly called "Order! order!" everybody became at once seated, for the regard which the colored people entertained for Sammy's preceptor was akin to affection.

With Doctor Winkles, who had now taken his seat, trembling with fear and mortification, in a chair before him, and Sammy at his side, Doctor Hubbs proceeded to relate how desirous the former was to attend this lecture, and how fearful he himself was that his presence would embarrass the young lecturer. "And now," he said, "while I do not approve of the singular expedient my friend has resorted to, I beg of you all to forgive him, for he is

a right good fellow after all, and a great friend and admirer of Master Sammy, who has doubtless made more rapid progress than he otherwise would have done if Doctor Winkles had not been forever pursuing him with knotty questions."

By and by all were disposed to treat the matter as a joke, and old Mr. Johnson sat down by Doctor Winkles and entered into a cordial conversation with him. But this discovery was a bitter pill for the proud man who had presented himself in this disguise, and when, a few moments after, the close of the meeting was announced by Doctor Hubbs, the mortified Winkles stole out by himself and made rapid steps for home, as rapid as his weak knees would permit him to travel, for he dared not take a street-car with such a smutty face as he now bore, streaked with the perspiration which ran down his cheeks in the excitement he had passed through. He was neither a white man nor a colored man, nor yet a mulatto, for in the latter the white and black are more happily blended; he might, perhaps, have been called a brindle.

Sammy had acquitted himself so well that Doctor Hubbs had no words of censure for old Mr.

Johnson, who had caused the bills to be put up. In bidding the old man good-by, he said in a good-natured way "You seem to know Sammy's measure better than I."

As for the Tubbs family, they felt so proud of Sammy they made all sorts of excuses for him to remain at home overnight. The fact was they wanted everybody there not familiar with them to know that the young lecturer was their son and their brother. Sammy gratified them by remaining, but it was a late hour before the house was fully cleared of visitors and the lights put out. It was the great event of the day at the unpretentious home of the old whitewasher Tubbs.



CHAPTER III.

SAMMY AT HIS CHORES—THE INVITATION TO A MASKED PARTY—SAMMY AND HIS TWO MONKEYS WANTED TO MAKE SPORT—SPONSIE NUMBER 2 AS A SOLDIER—PHILOSOPHY OF MEMORY—TALK ABOUT THE BRAIN—SPONSIE NUMBER 1 BLOWING THE HORN FOR SAMMY.



OTWITHSTANDING the late hour at which our young lecturer retired last night, he is on hand before six o'clock this morning attending to his usual duties at the house of his preceptor. To one unaccustomed to seeing what is called menial labor performed by one who is capable of interesting an audi-

ence in a lecture on so difficult a subject as the brain, it would have looked strangely to see the

precocious Sammy sweeping the walk and brushing his employer's boots. A young olive-eyed German, of white skin and small brain, who occupied the same position before Sammy, left it in disgust because, as he said with a curled lip, in broken English, "I vosh no little poy to prush the valk and sweep the boots!" But in this fortunate country, where freedom was born before a dozen nests of kings were hatched to lay claims and counter-claims to the divine right to make laws and customs for the people, as in France and Spain, many of our greatest men began life in the field or work-shop, and in the performance of duties mistakenly called menial. With such humble beginnings they had no false pride to hinder their footsteps as they patiently ascended the ladder of ambition to honorable fame. Many, trying to evade the lower rounds, lose their foothold, and, falling, unsuccessfully struggle through life without reaching the position to which they aspire. Others, beginning upon the higher rounds and by some misstep losing their hold, never recover their original position, because they look with contempt upon the lower rounds whereon honest hand-labor

is struggling. Let it be the pride of our American youth to begin, if necessary, at the very bottom step, and, with firm hands, honest hearts, and clear heads, commence the difficult ascent, keeping in mind such marked examples of honorable success

as are presented in the lives of Franklin, Lincoln, and Greeley.



MINNIE UNMASKED.

Ah! our first visitor this morning is our fat friend Mrs. Millstone. She is out for an early walk, and calls to ask Sammy if he will attend a masked party at Mrs. Biddlewicker's house the coming week? Mrs. Biddlewicker wants Sammy to come in the character of a village doctor, bringing with him the two monkeys to help make sport.

The occasion is the celebration of the birthday of Miss Minnie Biddlewicker, a bright young lady of sixteen, daughter of Mrs. Millstone's friend.

By the way, my young readers have seen how folks look in mask in our second volume where the picture of the fantastics occurs ; but to remind you still again, I here show you how a good-looking girl appears first without a mask and then with one.

Sammy has never attended a formal party, and the invitation causes him infinitely more embarrassment than when he was asked by his old friend, Mr. Johnson, to deliver a lecture. He regarded that request as of too little consequence to consult his preceptor about it, for he had become accustomed to



MINNIE MASKED.

standing up and talking before a room full of his colored friends. But this is a novel invitation ; so, excusing himself to Mrs. Millstone, he at once flies upstairs to Doctor Hubbs' room to consult him before making a definite reply. He finds the

Doctor just about ready to descend to his office, and the two, joining hands familiarly, like father and son, go downstairs together.

Mrs. Millstone, after cordially shaking hands with the Doctor, explained to him that Mrs. Bidlewicker had determined to give her daughter Minnie a party on the anniversary of her birthday, and that Doctor Winkles' curious adventure of the night before had suggested to both of them that the affair might be made more jolly if they should invite the young people to come in mask.

"Next," said she, "we happened to think it would be a great novelty if we could have Sammy attend with his two pet monkeys. It would make such lots of fun, you know."

In this suggestion the Doctor concurred, but, drawing near to his fat, jovial-looking friend, he whispered in her ear that it would be necessary to have Sammy keep his white mask on after the rest should unmask; otherwise some silly girl or boy would object to his presence on account of his color.

"That's so!" exclaimed Mrs. Millstone in a thoughtful mood, and dropping her eyes for a

moment as if this idea had not entered her mind before. "Well, well," she said hesitatingly while raising her head again, "we can somehow manage that. You are willing that he should go?"

"Certainly," responded the Doctor, raising his voice from the low, confidential tone in which he had a moment before been speaking. Turning to Sammy, he asked: "I suppose you would like to attend, wouldn't you?"

"How could I possibly do it and attend to my evening class?" inquired the faithful lad, who never thought he could neglect a duty for the sake of pleasure.

"There is an obstacle," said the equally faithful Doctor, addressing his friend Mrs. Millstone.

A discussion of some length ensued, resulting in the decision that Sammy could go after he should get through with his duties, as his hour with his evening class closed at nine o'clock.

Before the conversation was concluded, Sponsie Number 2, who was now feeling pretty well again, bounded into the room arrayed in a cheap soldier's uniform, which Bridget had made for him, and in which she was drilling her pet to be ready, as she

said, "to bate the b'ys in grane on St. Patrick's Day," when this great Irish holiday should again come round.



SPONSIE NUMBER 2 AS A SOLDIER.

"Carry arms!" exclaimed Sammy, who knew what Bridget was up to.

In an instant the monkey stood up, and placed in true soldier-like position the wooden gun which he held in the right hand, while the left fell perpendicularly to his side.

With equal promptness the monkey curiously enough responded to various other orders which Sammy had picked out of the Soldier's Manual for the use of Bridget, who thought that she knew enough, with these new acquirements, to command a regiment on the field of battle.

In the midst of it all, Mrs. Hubbs, attracted by the loud laughter, entered, and was as much surprised as all, excepting Sammy, had been at what Bridget had taught the invalid monkey. It was then talked over, and determined as best that Sammy should take two characters at the coming party in mask: one as a captain of militia, and drill the two monkeys to perform their parts as soldiers together; the other as doctor, in which the monkeys would be taught to play sick, and take what should look like sugar-coated pills, when in reality the doses should be made wholly of sugar.

With these preliminary arrangements effected Mrs. Millstone departed, while Doctor and Mrs.

Hubbs, who could not persuade Mrs. Millstone to remain, descended to the dining-room at the call of the breakfast-bell. Sammy was at his post as usual with tray in hand.

Doctor and Mrs. Hubbs congratulated the young lecturer on his success, and Mrs. Hubbs expressed great regret that she was not present. Both, however, were guarded in their praises lest even so sensible a young head as Sammy's should be turned and spoiled by flattery.

The fact was, nobody could have been more surprised than Doctor Hubbs himself was at the ease with which the young lecturer delivered an address without written notes. The Doctor had never attended one of Sammy's evening classes where the boy, little by little, had acquired the necessary self-possession to speak before an audience. Nor was he aware that his pupil knew so much more than he had taught him about the brain.

When all had breakfasted and Sammy had done his kitchen chores, the latter returned to the office-room to finish some little matters at which he was working when he was interrupted by Mrs. Millstone's call.

The Doctor was already there bending over his desk. Seeing the young prodigy enter, he raised his head and, brushing aside some manuscripts upon which he was engaged, asked :

“ Where did you get hold of all that information about the brain which you gave in your lecture last night ? you used but very little of that to which I called your attention yesterday afternoon.”

“ From the papers,” responded Sammy. “ I have read the reports of the lectures by Doctor Brown-Séguard, and those by Doctor T. S. Lambert ; and many other good things I have found in the newspapers.”

“ Well, our journals are really getting to be great educators,” remarked the Doctor, “ notwithstanding the adverse opinion of the late Dr. Rush, and the fact that Mr. Parton accuses them of telling frightful whoppers now and then. You seem to keep up with them pretty well, Sammy ; how do you manage to get time to do it ? ”

“ Oh,” replied the young lecturer, carelessly drawing a paper from his pocket, “ I always carry something good around with me, and then less

I have an unoccupied moment I improve it. For instance, this paper—*The Golden Age*—contains a scrap from Doctor Carpenter in which he explains how we remember what we learn in our early years better than we do those things we acquire later in life. He tells us that it is when the brain is growing that the direction of its growth can be most strongly influenced. He says about the same thing as if he should tell us that the brain gives out a little nerve-memorandum every time anything is heard or learned. It is as if I should write every new thing I hear or see on a slip of paper and put it in my vest pocket for future reference whenever anything occurs in any way relating to any one of them. But Doctor Carpenter calls these little tablets in the brain nerve-tracks; he says they accumulate as we keep learning something, and that it is in this way we gather impressions or traces, which may be brought within the sphere of consciousness, whenever the right suggesting strings are touched.”

The boy stopped to think a little, and the Doctor, supposing he had finished, remarked: “But stone’s s not quite explain why we remember bet-

ter what we learn in our younger years than that which we acquire in later life."

"Well," resumed Sammy, "I have not told you all yet. Doctor Carpenter says that those nerve-tracks with their accompanying fibres which are formed in early life, secure a firmer hold in the brain than those which are formed in advanced age when the nutritive machinery is less active and its deposits less lasting. The stomach does not digest the food as well, the little corpuscular moners of the blood do not so perfectly transform the food-particles into animal fibre, and the little nerve and brain builders do not do such good work in old age as in youth; so that while the less strongly built nerve-tracks crumble away in the changes which are constantly going on in the body, those which were laid in the substance of the brain when the bodily machinery was younger and stronger, are able to take to themselves new building material for their perpetuation much more readily than those formed in later life. The old and firmly established nerve-tracks formed in youth are what enable the old man to recall things which happened years ago. The new and less

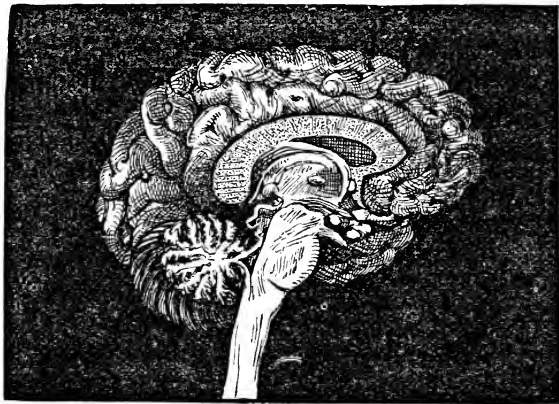
firmly established nerve-tracks, which are formed by what the old man sees and hears in his old age, crumble away, as the old atoms of the brain give place to the new ones, and in this way the later nerve-tracks are constantly being destroyed, and new ones, recording still more recent events, forming to take their places. It is as if I should make marks on my slate now with a hard pencil so deep that they can never be rubbed out, and then as I grow older I should keep substituting a softer pencil. As I sponge off my slate every morning for my day's diary, the early marks of youth would persistently remain, while those made by the softer pencils of age would be wiped out to make room to put down the last events that may have happened. So with the nerve-tracks, those laid in the brain during youth are deep and enduring, while those formed in later life daily give way to still newer ones no less feeble and perishing."

"Let me see that article," requested the Doctor, reaching to Sammy for the paper. As he looked over what was presented under the head of "Persistence of Early Impressions in Old Age," he was both surprised and pleased to find that the

boy had given the substance of the article in his own language, with original explanations which would have made it plain if presented to the dullest pupil in his evening class.

“That is indeed very interesting,” remarked the Doctor, as he handed back the paper; “and you have made the idea clearer than the author himself has done. If, as Doctor Carpenter believes, everything which we see, hear, or think, leaves a nerve-track in the brain to fix it permanently there, we may be able to account for the fact that the convolutions of the brain increase from childhood to middle age, for the brain must be literally indented over and over again with nerve-tracks, and the skull of a middle-aged brain worker must be like the miscellaneous pigeon-hole of a counting-room, crowded and stuffed to overflowing with memoranda. Then the gradual crumbling away of many of the least enduring of these nerve-tracks with their accompanying fibres as one advances in life may account in part, at least, for the fact that after the age of fifty the brain loses one ounce in weight in every ten years.”

“The brain is a wonderful, wonderful organ,” continued the Doctor, as he arose to take from the shelf two plates which he proceeded to show Sammy. “This first one,” said he, “which is supposed to represent the brain just as it would look



A SECTION OF THE BRAIN.

if one hemisphere or one half of the whole brain were to be sliced right off on the side, gives you a good idea of the convolutions which may be seen all over its upper surface. Right down under the middle of the convolutions is the Corpus Cal-

losum which is made up of the nerves which connected that half of the brain with the half which has been cut away. The little dots are intended to represent the ends of the nerve-fibres which made the connection between the two hemispheres. That white body that goes downward out of the brain like a stem contains in its upper part what is in difficult words called the Pons Varolii ; next below that is the Medulla Oblongata, and this is the enlarged end of the spinal cord. The stem itself is a part of the spinal cord which runs down through the bony canal of the spinal column. The larger body under the convolutions and back of the white stem is the left half of the little brain or Cerebellum. Steele describes this in plain language which even your class could understand.

“ He says: ‘ It is about the size of a small fist. Its structure is similar to that of the larger portion of the brain or Cerebrum ; but instead of convolutions, it has parallel ridges, which, letting the gray matter down deeply into the white matter within, give it a peculiar appearance, called the “ arbor vitæ, or tree of life.” (This, you see, looks like a leaf upon the Cerebellum in the pic-

ture ; whereas it is what that portion of the Cerebellum looks like when it is cut in halves, and the cut surface is shown to you.) This part of the brain is the centre for the control of the voluntary muscles. Persons in whom it is injured or diseased walk as if intoxicated.' ”

“ What,” interrupted Sammy, “ did you tell me yesterday afternoon that the Pons Varolii was for ? I have forgotten.”

“ It is,” replied the Doctor, “ called ‘ the bond of union ’ connecting the Cerebrum above, the Medulla Oblongata below, and the Cerebellum behind. It is made up of numerous fibres going up and down and crosswise, and these fibres are intermixed with that gray matter which seems so inseparably connected with the nervous system. The Pons Varolii, indeed, may be said to stand in something of the same relation to the Cerebrum, Cerebellum, and Medulla Oblongata, that the Corpus Callosum does to the two hemispheres of the Cerebrum. But the latter unites only two parts of the Cerebrum, while the former unites all three portions of the brain as I have just explained to you.”

“ The connecting link between the man and the

monkey, and between the monkey and the cocoa-nut!" ejaculated Sammy in a humorous mood, which flashed from his eyes and glistened between his lips.

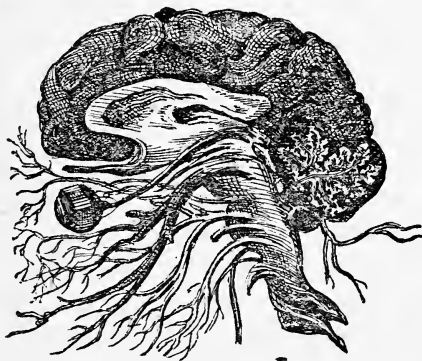
"Well, yes," answered the Doctor, laughing at the boy's remarkable comparison. "By a stretch of the imagination you might say that it connects the vegetable man with the animal man, and the animal man with the intellectual man; and yet it would not be scientifically correct, for all the higher forms of animal life below man have a Cerebrum, Cerebellum, and Medulla Oblongata, similarly united, while trained monkeys appear to nearly as good an advantage as uncultivated men. The higher development of the Cerebrum, the multiplication of the convolutions of the brain, and the greater amount of gray matter are the distinctive forms and qualities of the brain of man as compared with that of the brain of the well-developed animal, outside of the human species. It is estimated that the surface of the convolutions of a well-developed human brain will sometimes reach six hundred and seventy square inches.

"In the other plate," continued the Doctor,

picking up the one which had been accidentally dropped during the conversation, "you have another view of these convolutions, and in addition thereto the nerve branches which go to the face, eyes, nose, mouth, ears, etc., etc.

"By this picture you have an opportunity to see how what are called the cranial nerves are reaching forward to place us in communication with the outer world through the instrumentality of the eyes and ears, with which they are connected, and to enable us to enjoy the fragrance of the flowers, and the delicious flavor of fruits, etc., by nerves which penetrate the nostrils, for it is believed by many that our ability to taste and to determine flavors, as well as to detect odors, is dependent upon the olfactory nerves. The little nerve branches ending just back of the eye-ball, are those used in moving the eye to the right and to the left, and upward and downward. The largest nerve with its branches reaching forward and downward, supply the eyes and nose still further, and also the teeth and jaws. It is believed by physiologists that this nerve assists us in our sense of taste. It is surely the nerve which reports to

the brain the painful operations of the dentist. Toothache and neuralgia move along in these nerve-tracks, and communicate their existence to the brain. The other branches I may explain at some future time," concluded the Doctor, "for



SECTION OF THE BRAIN WITH CRANIAL NERVES.

neither you nor I can spend more time this morning in talking about them. You must go to your Dispensary, and I must make some calls."

Sammy suddenly casting his eyes to the clock, and observing the lateness of the hour, did not

stop to assent or dissent, for it was about five minutes of ten o'clock.

In a moment more both the Doctor and his impatient pupil jumped into the phaeton, for the former had intended to drive in the direction the latter wanted to go. But the conversation about the brain and nerves was not resumed during the drive, for Sammy was impatient to reach his Twenty-seventh Street home, while the mind of his preceptor was preoccupied with matters appertaining to his patients. As the two drove up in front of Sammy's sign, they were amused to see Sponsie Number 1 seated on the railing of the front veranda, blowing as hard as his lungs would permit him, a large old-fashioned dinner horn which was formerly used on the old plantation in Tennessee. The animal seemed to realize that his young master was behind time, and as he had seen old Mrs. Tubbs nearly blow her cheeks off on the antique-looking instrument on a few occasions to bring home old Father Tubbs when he was white-washing in the neighborhood, the monkey evidently thought he would try its virtues on the younger Tubbs. It so happened that the result

was highly satisfactory to Sponsie's mind. It would be difficult to convince him that he and the old horn did not bring Sammy to his post of duty.



CHAPTER IV.

SPONSIE NUMBER I AS A SOLDIER—A SAMPLE OF HIS BRAVERY IN THE FACE OF DANGER—HE SEEKS SAFETY IN BLÜCHER'S KENNEL—THE STORY OF CHRISTY—GREAT FUN AND LAUGHTER IN THE ALLEY—DOCTORS WINKLES AND HUBBS TALK ABOUT THE BRAIN—THE QUARREL BETWEEN SPONSIE NUMBER I AND BRIDGET—THE CAUSE DISCOVERED.



HOWEVER successful Sammy may be in making a home-guard of Sponsie Number I in a time of profound peace, it is evident from what I am about to tell you that he could never make of him a good soldier to send to the front in time of war. Shortly before twelve o'clock, or in other words, a little before the closing of the Dispen-

sary hours yesterday, Sammy dispatched one of his sisters with a message to Bridget to send the soldier's toggery and gun. He wanted to put Sponsie Number 1 through a short lesson. By the time the sister returned, the brother had finished his Dispensary duties for the morning. The next thing in order was to make a "bold soldier-boy" of the courageous young rider of the noble Blücher. Surely a fellow who could so bravely ride the big dog, and who had the fearlessness to attempt to break him to the harness, would be just the chap to put on the soldier-straps, and shoulder a rifle cannon if necessary.

The putting on of the regimentals was an easy thing to do, for the monkey entered right into the spirit of the thing! He had hardly patience to wait for the last button to be put through its button-hole. The moment it was done, he leaped upon the bureau in great haste to view himself in the mirror. Sponsie strutted across the bureau watching his own movements with as much satisfaction as a young military prince could have done, when dressed for parade. He imagined himself equal to any of the Seventh Regiment

boys, and very far superior to the Billy Wilson Zouaves. "Now," said Sammy to his sister, "bring me the gun." As the girl re-entered the room with this harmless wooden instrument, a scene ensued which cannot be described with



LIKES THE CLOTHES.

printer's ink! Sponsie, seeing something in the shape of a gun, sprang frantically from the bureau to the top of the mantel-piece, and from there to a high shelf, knocking off books, papers, and a large glass lamp which scattered its broken fragments in all directions when it struck upon the floor. Fortunately it did not contain any kerosene

or sperm oil. What a chatter! Then again what another jump! Through sash and glass, slam-bang, then into the back alley to where the grand-looking old Blücher lay before his kennel. As Sponsie approached him, the noble animal

sprung up on his fore feet, leaving his hind ones still reclining upon the straw, and put on an inquiring look as if to ask—"What's up? what's the matter?" Sponsie, without stopping to give any satisfactory explanation, dodged to the very furthest corner of old Blücher's inviting home and buried himself, soldier's clothes and all, beneath the straw bedding.

It is not likely that Sammy or his sister could have found the deserter if Blücher had not looked so wondrous wise.

"The dog knows just where Sponsie is," exclaimed Sammy, approaching the kennel. "Drop that gun, Esther," added he in a low voice, presenting the palm of his hand behind him in a cautioning manner, "or our brave soldier-boy will have another



BUT DON'T CARE FOR THE GUN.

fit if we succeed in finding him." As the girl dropped it, old Blücher picked it up between his teeth, little thinking that this was the formidable instrument that had frightened Sponsie. Rising now upon all fours, the dog walked about, wagging his tail, and carrying the gun cross-wise in his large, laughing mouth, looking still as if he would like to know—"What's going to be done now?"

Sponsie, seeing from his hiding-place that old Blücher had the terrible weapon in his mouth, crept out from the kennel, and finding that the dog was not afraid of it, undertook as frantically to get the gun away from Blücher, as, a little while ago, he had tried to get himself away from the gun. There was a struggle for a little time, for playful dogs do not like to let go such things, but seem rather readier to sacrifice their teeth than to give up either a stick or a bone when once they have picked one up. With Sammy's and Esther's help, however, the gun was taken away from Blücher, and then you should have seen our bold soldier-boy strut up and down the alley, with the gun against his shoulder, as he had seen the boys in a target-excursion carry theirs.

The cowardice of the monkey when he thought there was danger, and his exceeding bravery when he knew there was none, reminded Sammy of a play in which the late George Christy used to take



THE BOLD SOLDIER OF THE ALLEY.

a prominent part. There was supposed to be a terrible quarrel upon the stage between about half a dozen fellows on one side and as many more on the other. George would lead up his braves, brandishing his fists in a most fearless manner, till within

arm's length of his adversaries, when he would faint dead away and fall into the arms of his comrades. By the time he was dragged away to a safe distance he would come to, and then with the greatest display of courage, as if he had not already faltered, he would again advance, telling his boys behind him in a most assuring tone not to be afraid—"I am here! boys, I am here!" But his encouraging commands would again die out as he met his combatants face to face, and over and over again would he be borne to the rear by his companions, as limp as if life had departed and left only some worthless remains. Well, Sponsie was just such a brave soldier-boy as George was in that bit of acting. Sammy and Esther nearly split their sides over Sponsie's manœuvres, and the story of Christy, which the former told in a graphic manner, playfully illustrating with his own person the fearless advances of the comic actor, and then the swoon which followed, falling heavily against the fence, while his sister made the alley ring with merry peals of laughter. After putting Sponsie through his first drill our young lecturer turned his steps towards his Broadway home, shaking his sides while thinking

of what he had to tell the Doctor. But on arriving he found Doctor Winkles there. The boy was unable to feel quite the same respect for Doctor Winkles that he formerly entertained, and meeting him so unexpectedly at this time, it dampened somewhat his glow of humor. But he managed to tell both of the doctors the story of Sponsie's fear of the gun and of his pride upon being drilled to the hazardous duties of a holiday soldier. All laughed heartily over the story of the affair, and it was agreed all around that Sponsie would do better on parade or on a target-excursion than he would for service in the field.

The first word spoken by Doctor Winkles, after the merriment had subsided, was to make explanation, in the presence of Sammy, with reference to the course he pursued on the night of the boy's début as a lecturer. He told the latter that he should have presented himself without disguise if Doctor Hubbs had not so strongly urged him to keep away altogether. "But," he said, in a patronizing tone, "to keep away, you know, Sammy, I could not do; for I feel as much interest in your progress as Doctor Hubbs does, though I confess

I could not have proved so successful a teacher as he has done.

“My Louis Napoleon,” he continued, “is just as big a dunce as ever he was. His bones lengthen and his muscles grow, but it is difficult to observe much development of brain. Sometimes I think I am to blame for it, but when I consider how much the brain differs in quality in different people of the same race, I console myself with the reflection that Louis has a better stomach to digest food than he has brain with which to digest any idea I may have ever attempted to work into his head.

“By the way, friend Hubbs,” continued Doctor Winkles, addressing himself this time to Sammy’s preceptor, “what do you think of Buchner’s theory, that it is the peculiar function of the brain to secrete thought, just as it is the function of the liver to secrete bile?”

This curious idea made a new nerve-track in the brain of our young lecturer. A new convolution was doubtless added somewhere, and fresh gray matter flew to the place to cover the newly sprouted brain-fibres. He now watched with interest his preceptor, who proceeded to reply :

“ Well, I confess I hardly know what to think of it. It seems as if the human brain was a ‘ thing,’ to use an expression of Sammy’s, quoted from Lord Dundreary, ‘ that no fellow can find out ’ ! I have been greatly interested with what the great German physiologist has written, but my own views are more nearly represented by the writings of Fernand Papillon.”

“ I have not met with any of his productions, although I have heard of them,” said Doctor Winkles. “ He, doubtless, would consider the views of Buchner as too materialistic, would he not ? ”

“ He believes and argues in a way not to be easily answered,” replied Doctor Hubbs, “ that the brain and nerves are only the instruments of the soul. In an article on the ‘ Physiology of the Passions ’ he enters into a lengthy argument to show that the brain is the centre of passional as well as of intellectual phenomena, and then further to demonstrate that nothing can be found in the nervous ganglia or brain to fully account for them, but that we must at last admit of the existence of a psychic faculty or soul. I have not the time now to give you the points presented in the article in

their logical order ; to present them otherwise would be to greatly weaken their force. You had better read the article yourself. It is in the March number of the *Popular Science Monthly*. He concludes what he presents at much length with substantially



COURAGE UP. (See page 75.)

these words : ‘ Passion resides in something that is neither the brain nor the nerves nor the muscles ; a something which perceives, enjoys, and suffers, and which moves the entire body in unison with its own feelings. Now this conscious faculty,

he says, this faculty of perceiving causes in no wise mechanical, is the soul. The more deeply we study the physiology of the passions, the more are we convinced that the agitation of the nervous and motor energies is but the outward manifestation of



COURAGE DOWN. (See page 76.)

deeper causes which we call psychic. So, too, he finally concludes, the more we study into matter the better we comprehend that it is only an external form, a kind of clothing to something which we cannot see. Thus does science ever lead us back

to that eternal and mysterious thing we call force, and, beyond force, to that which we call spirit."

Sammy was quite as interested a listener as Doctor Winkles, as he, to save time, polished his preceptor's case of instruments and kept his eyes for one moment upon his work and then upon Dr. Hubbs alternately.

Doctor Winkles, noticing this fact, turned to the boy and asked: "What do you think about it, Sammy?"

"Well, I don't think that the brain is an organ for secreting thought the same as the liver is the organ for secreting bile," replied the bright young man, "although it seems to have a way of working up into ideas the food it extracts from the blood, which in turn has had its supply from the food received by the stomach."

The eyes of both doctors were now fixed with surprise upon the remarkable lad as he proceeded:

"I was reading something by Huxley the other day, in which he said that every word uttered by a speaker cost him so much bodily loss. In the strictest sense, he informed the reader, that the

speaker burned that others might have light. So much eloquence, so much of his body resolved into waste matter. This loss of substance he further said we must make up by taking food. This would look as if Doctor Buchner's theory was correct, but it seems there is another side of the question yet, as presented by the one whom Doctor Hubbs has been talking about, and this better accords with my notion."

"Your head is level!" exclaimed Doctor Winkles, looking greatly pleased. "One thing is evident enough," he added, assuming a more serious expression, "the brain itself is a physical organ, and must be supplied with food when it is at work just as much as the lungs, liver, or stomach must be fed while attending to their functions. And Mr. Huxley's statement can be easily reconciled to the position taken by Mons. Papillon."

While making the foregoing remark Doctor Winkles arose from his chair, and drawing on his overcoat, prepared to depart. As he shook hands with Sammy, who had come to assist him in putting on his over-garment, he asked in a tone that was earnest as well as humorous :

“ You have forgiven me for what I did the other night, haven't you ? ”

Sammy looked his interrogator pleasantly in the face, but hesitated, for he hardly knew whether or not his feelings would warrant him in saying yes. The affair referred to, whether precisely as explained or viewed simply as a joke, was one which aroused in the boy's breast not a little of indignation. In other words, his soul had been offended, and this psychic faculty stirred his nerve-fibres to an emotion which he could not resist. As Mons. Papillon would say, the offence had no mechanical cause with which to agitate or irritate the nerve-centres. Finally Sammy said, as he squeezed the Doctor's hand in a more cordial manner, “ I'll try, Doctor, to do so.”

Doctor Hubbs, in bidding his friend good-by, assured him that Sammy's disposition was quite too amiable to harbor hard feelings against any one for a great length of time, and that he had no doubt but that the wound that the boy's psychic faculty had received would in time fully heal. “ But you know,” he added, “ you could not have committed a greater offence against Sammy and

his people than to burlesque their color and speech on an occasion like that, especially after the family pride had been thoroughly aroused by Sammy's remarkable success."

Doctor Winkles really left the house with something pricking his inner consciousness, or soul, very much as a sliver tortures the flesh. He might be said to be suffering with a moral sliver in his psychic faculty, and he greatly regretted that he had not had a little "more fore-sight" as well as "hind-sight," as Mr. Beecher once aptly remarked in explanation of something he had done which was sharply criticised.

On Sammy's going down to the kitchen to put away the chamois and whitening with which he had been polishing the Doctor's instruments, he found Bridget and Sponsie Number 2 in a boisterous quarrel. Bridget was holding in one hand the soldier-clothes which Sammy had returned on coming home from Twenty-seventh Street, and with the other she was shaking her finger and scolding the monkey in a loud tone of voice, while the little fellow, from a perch on the top shelf of the tin-closet, was chattering back in the wildest manner. Between

the scolding of Bridget and the chattering of the monkey, Sammy could not have made his voice heard if he had attempted to speak at the moment of his entering the kitchen. It seemed that Sponsie Number 2 would not allow Bridget to put the soldier's clothes on him. This was to her a mysterious freak on the part of the little fellow, for heretofore nothing had given him greater pleasure than to don the soldier-coat and pantaloons with stripes at their sides and go through the drill. The monkey enjoyed it because it seemed to make him feel as big as a soldier, and Bridget was equally pleased, for it raised herself in her imagination to the dignity of a commanding officer. She always felt like one born to command, and the drilling of Sponsie Number 2 had afforded her the first opportunity of



THE QUARREL.

THE QUARREL.

She always felt like one born to command, and the drilling of Sponsie Number 2 had afforded her the first opportunity of

gratifying this part of her ambition that she had ever experienced. But now, for some, to her, inexplicable reason, even this bit of keen pleasure was denied her, for her

“disorderly private” as she called him, would not allow the uniform to be put on.

“I know what’s the matter,” said Sammy with a wise look, after the tumult had somewhat subsided. “He knows by the smell of

those things that Sponsie Number I has had them on.”

“Faith an’ yer right Sammy,” exclaimed Bridget. “That’s jist what’s the matter! Ain’t he a smart b’y, indade? be the powers, an he aise,” both asked and answered the girl in the same breath, rolling her remarks in loud laughter, while the monkey projected his head from his retreat with his sad face and blinking eyes, as if to know what



THE CAUSE.

had so suddenly changed the violent temper of the girl.

Our young lecturer ran upstairs and communicated the state of affairs in the kitchen. "I do not," he said, "know what I am to do if Sponsie Number 2 will not train with Sponsie Number 1. I may be compelled to leave one of those chaps at home from the party."

"If," remarked the Doctor, with a broad smile, "you could find the nerve-tracks in the monkey's brain which recorded the fact of his imprisonment by Sponsie Number 1 and his sufferings while shut up and hazed by the latter, you might perhaps rub or cut them out."

"Pity he isn't about eighty years old," replied Sammy; "then they might crumble away without assistance. As it is, I fear they are the enduring nerve-tracks of youth."

"Yes," added the Doctor, "and his nerve-centres have been stirred by causes which are both mechanical and psychic."

Just at this moment, the conversation was interrupted by the door-bell, and not for the time resumed, for a patient was ushered into the Doctor's

consultation-room. If Sammy should hit upon a plan effecting a treaty of peace between his two little mischief-makers, you shall hear the news before anybody else receives it. The prospect just now is, that one of those Sponsies will have to stay at home from the Biddlewickers' masked party.



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CHAPTER V.

THE MILITARY DRILL OF THE MONKEYS—THE BATTLE OF SHIN-BONE ALLEY—THE TWO SPONSIES PUT TO FLIGHT—THE PROGRAMME OF THE MASKED PARTY—SAMMY'S ARGUMENT IN FAVOR OF PHRENOLOGY—OLD MR. JOHNSON'S CALL.



If my young readers could have gone over to the Dispensary with Sammy the day following the one duly chronicled in the last chapter, you would have had a jolly time of it, if your clothes had been sufficiently loose to give play to your vibrating ribs and muscles. If in rupted clothing, something would have had to give sumed, The event is now known among the colored

people as the Battle of Shin-Bone Alley. The alley was thus named, because old Blücher had scattered so many bones along its cobblestone paths.

The facts are briefly as follows: Mrs. Hubbs on hearing that the invalid monkey would not put on his soldier-clothes, because Sponsie Number 1 had been wearing them, placed a few shillings in Bridget's hand, for the purpose of purchasing the material and having made up a new suit of regimentals for the fastidious trooper. Bridget made haste to perform her part, and had the suit all ready that very night. The next morning, after Sammy had got all of his morning work done, he took Sponsie Number 2 on his right arm, and with the soldier-clothes tied up in a handkerchief in the left hand, he wended his way to his 27th Street quarters. It was only half-past eight o'clock, and he had therefore an hour and a half before the commencement of his dispensary duties in which to drill the two monkeys.

Esther dressed Sponsie Number 1, and gave him a few lessons in the kitchen. Sammy put the soldier-toggery on Sponsie Number 2, and gave him a little drill by himself in the Dispensary. All

these preliminaries over, it was concluded best to take the two monkeys to the alley, and have them march towards each other, thus having them meet for the first time since their separation under the restraints of military discipline.



THE ADVANCE OF SPONSIE NUMBER 2.

Sponsie Number 1 was put down on his feet near old Blücher's kennel which was close by the house, and Sponsie Number 2 was taken to the outer end of the alley, where it merged into the street. The large gate at the entrance was closed,

to prevent either of the soldiers from deserting. The children gathered about in great numbers to witness the sport. Esther again drilled her home-guard at her end of the alley, while Sammy drilled his "bold soldier boy" at his end, a slight bend in



THE MARCH OF SPONSIE NUMBER I.

the alley and a woodshed upon it, preventing the two monkeys from seeing each other.

A nice little colored boy, who lived next door, acted as Sammy's aid-de-camp, and by the time it was thought that the young soldiers had been

sufficiently drilled to maintain good order when brought face to face, the aid-de-camp was sent forward to Esther, with orders to advance with her guard, while Sammy should advance with his. In a few moments all was ready, and the aid-de-camp returned to his commander. Both of the monkeys, viewed as they were by so many children, felt their importance. Each one advanced with a feeling of haughtiness which made them look nearly twice as large as they really were. It was believed that under the influence of soldierly pride each would acquit himself with credit both in respect to discipline and valor.

Esther was marching by the side of her brave, and behind was old Blücher, with head up, and tail up, one end wagging quite as much as the other, while a score of little boys and girls brought up the rear, dividing their attentions about equally between the dog and the monkey.

Sammy was by the side of his proud-looking veteran, followed by his aid-de-camp and lots of little folks.

By and by, as the two groups approached in the bend of the alley, the soldiers put on additional

airs, for they were too giddy with vanity to see each other. Their bedazzled eyes only took in the dark outline of the crowd on either side.

By a signal from Sammy, the command—"Halt!" came simultaneously from the lips of Esther and her brother. Then, with hardly a moment's pause, the orders were given—"Ready! aim!"

The stocks of both muskets flew to the shoulders of the combatants, who were supposed to be going through with a sham battle, and the barrels were levelled with due precision at each other, when, as suddenly as if a bolt of lightning had fallen between them, the muskets were dashed to the ground and the two braves retreated in opposite directions from each other, swinging their tails wildly about from under their regulation coats, and chattering as if each had received a mortal wound, each, too, followed by his gang of uproarious attendants, laughing as loudly as the monkeys were chattering. The truth of the matter was simply this: at the command—"Ready! aim!" each monkey for the first time became aware of the presence of the other. Hence the fright, hence the throwing away of weapons, and hence the

frantic retreat, more disorderly, indeed, than that known in our military annals by the name of "Bull Run."



THE BATTLE OF SHIN-BONE ALLEY.

In spite of every effort it was impossible to rally the monkeys and get them to shoulder their wooden

guns again that morning. Sponsie Number 1 stowed himself away under the straw in Blücher's kennel, as on a previous occasion, and Sponsie Number 2 reaching the closed gate, braced himself in one corner with his sad eyes nervously moving up and down, looking as if breathing within his own trembling bosom the patriotic words, "I want to go home!"

Esther carried the young warrior back to the Doctor's, while Sammy prepared to attend to his Dispensary practice. The children dispersed in all directions in great glee, and before noon there was hardly a colored family on the west side of the city that had not heard of and heartily laughed over the Battle of Shin-bone Alley.

When Sammy returned to the office of his preceptor, he found both Mrs. Millstone and Mrs. Biddlewicker awaiting his arrival. The Doctor had been amusing them with the report of the sham fight as given by Esther when she brought home the invalid monkey.

"We," said Mrs. Millstone, speaking in behalf of her friend Mrs. Biddlewicker, "want you to come to the masked party, prepared to give the

young people a lecture about something they will understand. The first thing to do, you know, will be to amuse them with the monkeys, if they will behave well together; or with one of them, if you think it best to have only one present. Then, just before refreshments, we want to place all the chairs in the double parlors in rows facing the end of the front room, and after seating everybody, have you stand up in front and give them one of your nice lectures on anatomy, physiology, or something. You will do it, won't you, Sammy?"

While Mrs. Millstone was laying out all this programme Sammy looked more uneasy than the Doctor did. The latter had been so many times happily surprised with the boy's efforts, he had come to have just about as much confidence in the ability of his sable pupil as old Mr. Johnson always seemed to entertain. But the young lecturer hesitated and looked not a little anxious when his old friend concluded the programme with the question put in a low and persuasive tone.

Standing up and talking to people with the most of whose faces he was more or less familiar, and in a place, too, where he felt entirely at home, was,

in his estimation, quite a different thing from standing up in a strange and fashionable house before educated children of the first families, whose tastes might not at all accord with his own. And this he frankly said to Mrs. Millstone.

“I know you will please them,” said she, “and with a mask on you won’t feel bashful. Nobody feels bashful at a masked party,” she added.

Doctor Hubbs told Sammy that he had no doubt but that the programme laid down by Mrs. Millstone could be successfully carried out, and he said :

“The lecture will not only be a novelty, but a very instructive feature. We want,” said he, “to get in the way of mixing religion, education, and play more inextricably together. They are not chemically incompatible elements, to use a phrase familiar to our profession.”

“What could I lecture about there?” asked Sammy, with an expression of face and language more like that of a whining boy than in keeping with the bright lad that he really was.

Both the ladies and the Doctor were surprised at this exhibition of timidity, and were about to

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speak all at once as a sound arose from the door-bell.

Old Mr. Johnson was admitted! Finding that there were ladies in the office with the Doctor he declined to enter there, but proceeded to make known to Sammy what he wanted as the two stood in the hallway with the front door remaining open.

Recognizing the old gentleman's voice, the Doctor stepped to the door and begged him to come in. "You are," he said, "just the one we want to see. Sammy is timid about engaging to lecture before some young people on Wednesday night at Mrs. Biddlewicker's!"

As Mr. Johnson stepped in and was introduced to the two ladies, he inquired if it was altogether a white folks' party. On being informed that it was, he said:

"Well, then, I am not surprised, then, that Sammy hesitates, then," replied the old man, putting a peculiar emphasis each time upon the word then.

"But it is to be a masked party, and all will be of one color," interposed the Doctor, hoping to be

able to gratify his friends, Mrs. Millstone and Mrs. Biddlewicker, in securing the presence of Sammy.

“ Ah, sir ! that is a different thing, sir ! We colored folks, sir, owe you white folks one, sir,



MR. JOHNSON GIVING HIS OPINION.

since your friend Dr. Winkles played off his masked joke on us, sir,” added the old gentleman, laughing heartily as he brought the end of his cane firmly down on the carpeted floor, with only a muffled resonance. “ Sammy, sir, you are equal

to it, sir. Black boys must not show the white feather, sir !”

The presence and assuring manner of Mr. Johnson completely changed the mental mood of the young lecturer, and the thought shot through his mind as to how much stronger he would feel if his old friend could only accompany him. “Perhaps,” thought he, in his innocent forgetfulness of the prejudice of race, “the ladies may invite him to attend. I will,” he said, addressing the ladies, “do just as Doctor Hubbs and Mr. Johnson say.”

“And I will let you know the result to-morrow,” added Doctor Hubbs ; upon which the ladies arose to depart, and, bidding Mr. Johnson, as well as the Doctor and Sammy, a cordial “good afternoon,” they left without extending the additional invitation which Sammy silently hoped would be given.

“I called, sir, on about the same errand, sir, that the ladies did, sir,” remarked the old man, as Doctor Hubbs returned to his seat. “But, sir, as it is for the same night, sir, I must put my little affair off, I see, sir.”

It seemed that Mr. Johnson had called to ask

Sammy if he would not lecture on Wednesday night on the subject of phrenology. Several young men, headed by young Diggles, had sent a written request of this kind to the old gentleman, who was regarded by the colored people as a kind of business manager of both the dispensary and of the young lecturer. It might be said, perhaps, that while they looked upon Sammy as Doctor Hubbs' pupil, they considered him the ward of Mr. Johnson.

When the latter concluded his explanation, Doctor Hubbs replied :

“ Scientists are bringing their batteries of criticism to bear pretty actively on phrenology just now ; but thus far they are rather answering claims set up in its favor in their own imaginations, than those which careful phrenologists have made. Many of them do not seem to have studied the science they are attacking, and are advancing upon a supposed enemy without knowing his position. They, indeed, in many instances, mistake some ‘ Quaker Guns,’ mounted here and there in their line of march by green phrenological recruits, for the true weapons of defence relied upon by

such men as Doctor J. R. Buchanan, the veteran Fowlers, Professor Sizer, and many others who always know what they are talking about, if they do not on all questions agree. Many careless words have been uttered by amateur phrenolo-



THE CHILD.

gists, but the older heads cannot be easily vanquished."

"It strikes me," said Sammy, once more exhibiting his true character, which seemed to have left him when the two ladies were present, "that if Mons. Papillon and Doctor Carpenter are correct, that phrenology must be rooted in truth which can be demonstrated. For instance," he said, "Mons. Papillon proves by physiological reasoning that there must be a psychic faculty or soul, which has charge of the bodily machinery. Doctor Carpenter, who is considered reliable authority in all that

relates to physiology, says that every time we see, hear, or learn anything which we can afterwards recall, some new nerve-fibres grow in the brain, and new nerve-tracks are formed. These two facts put together must mean that the psychic faculty or soul records in the brain everything that we learn. The former would naturally put those memoranda referring to similar things near together, just as in our filing letters away in our letter-boxes, we put letters from Chicago in the pigeon-hole next to the overflowing Illinois box, and letters from Boston in the pigeon-hole next to the crowded Massachusetts box."



THE MAN.

Just here Sammy paused, looking as if he had other ideas to advance, but needed time to put them in shape for utterance.

Both Doctor Hubbs and old Mr. Johnson cast

glances of proud satisfaction at each other while the little lecturer was proceeding with his argument; and when Sammy came to a protracted pause, looking a little confused, the Doctor exclaimed:

“ We catch your idea, Sammy. You think that the phrenologists, in grouping certain faculties together, such as those called the perceptive faculties, others known as the reasoning faculties, etc., are sustained in their method by what Monsieur Papillon tells us, and by what would naturally occur where an intelligence was guiding the formations of records in the brain. It is true that in our business affairs we classify our memoranda; that in writing or speaking effectively we classify our subjects; and it is but fair to suppose that the intelligence within us, which leads us to adopt such systems and methods, is no less methodical in its own work. Hence all that occurs belonging to the region of our perceptive faculties would lay new nerve-tracks there; all that appeals to our reasoning faculties would lay new nerve-tracks among them; all that exalts our moral and religious faculties would lay new nerve-tracks where

these faculties reside, and so on. And as both observation and experiment have demonstrated the location of these groups, we know where to find them; and if new nerve-tracks are formed every time we exercise any of the organs of these groups, it is evident enough that they must change in size, and that the apparently unyielding skull, undergoing, as it is, constant changes by the decomposition of old material and the rebuilding with new, reshapes itself to the changing form of the mass of peculiar matter within it. In the growing child who has a thirst for knowledge, this change is observable from year to year; and in the adult, who is progressive morally and intellectually, it is noticeable in those whom we do not daily see. Your idea, Sammy, is a capital one," said the Doctor, looking first to the boy and then to the old gentleman, who nodded an enthusiastic assent, and added:

"Doctor Hubbs, sir, we must have a lecture, sir, from Doctor Samuel Tubbs, on phrenology, sir. He is equal to the subject, sir. I'll wait, sir, until the party is over, sir;" saying this the old man gave some encouraging words to Sammy to go to

the party and to do credit to himself. "Speak on phrenology, my boy, unless you think of some other theme which you prefer, my boy, and then you can repeat the lecture at our place, my boy. You can do it, my son, you can do it, sir!"

Bowing to the Doctor, and shaking hands warmly with Sammy, the old gentleman left, thinking so earnestly about Sammy's smartness as he walked homeward, that his lips moved and his hands added here and there a kindly gesture, greatly to the amusement of those who passed him on the sidewalk. The latter did not know what new nerve-tracks were being laid in the region of the organ of benevolence in the old man's brain, as he thought of the field of usefulness which awaited Sammy among his own people, and of the promising capacity of the young lecturer to do the great work which beckoned him onward.

After old Mr. Johnson departed, the Doctor and Sammy took into earnest consideration the programme Mrs. Millstone had proposed for the party, and it was decided that Mrs. Biddlewicker should be informed that Sammy would do as her friend Mrs. Millstone had requested. It was be-

lieved, however, and the two ladies were to be told that probably only one of the monkeys would accompany Sammy. Further efforts would be made to teach them to take certain parts together, but if the efforts failed, only one alternative remained, and that was to take the most proficient actor, giving the duller one the slight. I will, therefore, now close my portfolio until Wednesday, for our young lecturer will have his hands full in making preparations for the coming masked party, at which he is expected to provide both fun and sober entertainment, by Mrs. Millstone and her friend Mrs. Biddlewicker, both of whom will keep this secret entirely to themselves. Even Miss Minnie knows nothing of the arrangement with Sammy.



CHAPTER VI.

THE MORNING OF THE PARTY—SHAM-FIGHT AND FALL OF SPONSIE NUMBER 2—PHRENOLOGY, PHYSIOGNOMY, AND SARCOGNOMY—THESE LARGE WORDS EXPLAINED—THE AMPUTATION OF THE FOOT OF SPONSIE NUMBER 2—ALL READY FOR THE EVENING CARNIVAL.



EDNESDAY morning! It is snowing a little. The curbstones, tops of fences, window-caps and sills, and brown branches of the leafless trees, look as if they had not wholly cast off their night clothes! Their spotless garments will dissolve from view when genial "old Sol" reaches forth his golden wand! Just now he is peeping through between two black clouds in the

eastern sky, and giving us promise of a fair day. In at least two houses in the great city there is the bustle of activity at the hour of eight o'clock. The Biddlewickers are making lavish preparations for to-night's entertainment, and at the Doctor's the two monkeys are being put through all sorts of training. Sammy has succeeded in effecting the most perfect and cordial understanding between Sponsie Number 1 and his former prisoner. Like the Confederate soldier and the survivor of Libby prison, they have struck hands across "the bloody chasm," and have come to regard all animosities as the products of the basilar (lower) region of the brain, and they want to lay no new nerve-tracks there. All heads, whether human or animal, seem generally to be born with enough of them.

The two homeguards have become so familiar with a gun and with burnt powder without balls, that they will not only carry small weapons that can be fired off, but will stand up bravely and pull the trigger which sends a flash of fire and a curling fold of smoke from out the ends of real metal barrels.

Early this morning Sammy had the two warriors in his room giving them what a theatrical manager would call a rehearsal. After marching and counter-marching the monkeys about in single file for some time to the rub-a-dub-dub of a small



THE REHEARSAL.

toy-drum hanging to the neck of Sponsie Number 1, his companion-in-arms meanwhile carrying a musket, their chivalrous commander placed them in position for a sham-fight. Each of the braves was provided with a perfect gun of miniature size loaded with powder and wadding, primed and capped for mortal combat! At a

given signal from Sammy, both fired, and Sponsie Number 2 fell as if terribly wounded. Of course he was not. It was all play, but exceedingly well done. It is worthy of note that Sponsie Number 1 insisted upon occupying the same superior position in re-

lation to his comrade that he had heretofore sustained when the latter was under the floor. Sammy started out by trying to have Sponsie Number 1 fall in the combat, for he thought that as he was a trifle smarter, he might go through the part a little better, but this would not work at all. The original Sponsie was willing to kill, but he was not willing to be killed or even to be wounded. It became necessary, therefore, to make Sponsie Number 2 the victim, as usual, and Sponsie Number 1 would strut about after the encounter as if the affair was an actual combat, and he a great hero.

Just now Doctor Hubbs is engaged in his office-room in showing Sammy a phrenological map of the brain. I will give space to a small copy of it by and by, so that all my young readers can see it. The one the preceptor and pupil are bending over, is copied and enlarged from Professor Buchanan's "Neurological System of Anthropology."

"And what is Neurological System of Anthropology?" I imagine that some of my readers may inquire, while nearly dislocating their jaws in giving utterance to these difficult words.

Well, to be brief, it is the whole nervous system of the human body. If you will turn to Webster's dictionary you will find Neurology defined as a description of the nerves of animal bodies, or the doctrine of the nerves. The same authority, if you consult it, will tell you that Anthropology is the science of man, considered physically, intellectually, and morally, or in his entire nature.

The work referred to, written by Professor J. R. Buchanan, was published in 1854, and is now unfortunately out of print. Ten dollars was recently paid for a copy, which doubtless, when published, could have easily been bought for less than one-third of that amount. It is to be hoped that its author, who is at present filling a professorship in the Boston University, and occupying the chair of Anthropology in the Eclectic College of New York, will find time to give to the world another volume, embracing his former and later discoveries in Cerebral Physiology, by which I mean the physiology of the brain. In all that Professor Buchanan presents in regard to the Physiology of the brain, Pathognomy and Sarcognomy, he fortifies his position by facts and arguments quite as convinc-

ing as those given by other investigators who take less advanced ground. If this work were intended solely for adults I would reproduce some of them in these pages; but I fear my young readers would hardly have the patience to peruse them, and I therefore feel constrained to content myself with calling attention to a brief outline of his discoveries, trusting that this will awaken an interest here and there in an inquiring mind that will be able to take up and carry forward the investigations which Professor Buchanan has commenced.

“But what do you mean by Pathognomy and Sarcognomy?” perhaps some bright, uplifted faces are inquiring, while I am rattling along as if I had not dropped some big words as formidable as chestnut-burrs, which ought to be picked open. Well, be patient, and I will fix it so that you shall in good time find out.

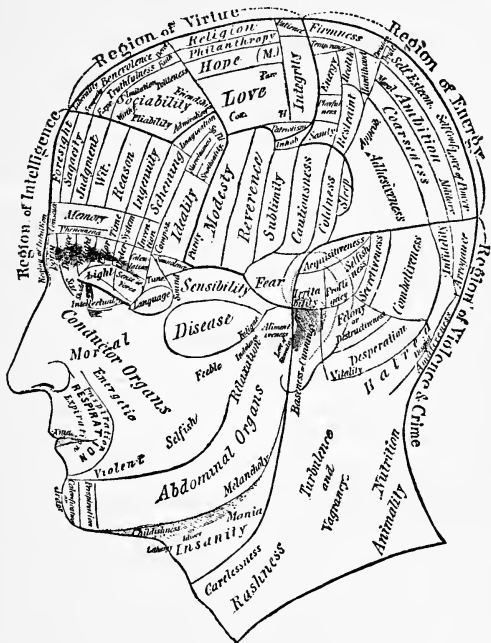
The science of Phrenology, most of my readers need hardly to be told, refers to the reading of the human character by the form and quality of the brain. The former is determined by the size and external conformation of the skull, and the latter by the temperament of the individual. Every fac-

ulty and passion is claimed to have a special organ in the brain, which is developed or diminished proportionate to its exercise or neglect. Phrenologists are not entirely in accord as to the location of a few of the organs ; but a majority of them exert such a controlling influence in the manifestations of the mind, that those giving attention to the subject seldom fail to agree as to the proper place in the skull to assign their residence. Time will correct all disagreements, and investigation will eventually place the science on a foundation which will defy the attacks of all assailants.

We will look now at a picture of the human head, and see where the groups of organs which exercise so much influence over all our actions are located. In presenting in this volume a picture containing so much, some of the names can hardly be read without the aid of a magnifying-glass. If you have one it will repay you to use it and examine the chart closely. But the larger letters outside of the line of the head will give you an idea of the regions in which many of the groups of organs are found.

In the picture it will be seen that the face is

pretty well covered over with names of regions



OUTLINES OF PHRENOLOGY.

which are influenced by the organs of the brain. The originator of the above chart, Professor

Buchanan, here reaches out considerably from Phrenology into Physiognomy.

Again I am touched on the elbow by some little inquirer who wants to know the meaning of Physiognomy. I ought to say, "Go to your dictionary," but as this will for the moment take your attention from these pages, I will give it to you just as Webster defines the word.

"Physiognomy: The art or science of discerning the character of the mind from the features of the face; or the art of discovering the predominant temper or other characteristic qualities of the mind by the form of the body, but especially by the external signs of the countenance or the combination of the features."

For instance, if either Professor Buchanan or Professor Redfield were to meet you, he would tell you just what sort of a boy or girl you are by the appearance of your eye, form of your nose, the size of your ears, shape of your chin, the width of your jaw, the conformation of your lips, and the prominences and depressions in your whole face. And he would tell you correctly too, so that your mother's face would be lighted up with pride as he

spoke of the good traits she knew you possessed, and droop in sadness as he revealed the bad qualities which she hoped nobody but herself would ever discover.

Investigations in Physiology sustain the claims of Physiognomists, by which latter term I mean those who understand or teach Physiognomy. If M. Duchenne were present he could with an electrical instrument touch certain muscles of your face and make you look cross; touch others and make you look as if you were greatly pleased; again touch certain other muscles and cause your expression to be one of happy surprise; agitate others and make you appear as if greatly disappointed, and so on, causing all sorts of facial expressions.

Well, now, every thought which passes through your brain stirs in some way a facial muscle. This agitation of a muscle diverts to it a greater flow of blood; this flow of blood to the muscle causes it to grow. M. Duchenne would give those muscles mechanical agitation with the electrical stimulus, and if continued long enough would somewhat magnify the Physiognomical indications of your character, and thus in a measure mislead

the Physiognomist. But inasmuch as your facial muscles are seldom stirred by mechanical causes, but are thrilled by nervous forces sent from your brain every day of your life, the skilled Physiognomist would have no difficulty in reading your character in your facial lines, because the thrilling of these nerves, and the agitation of the muscles under their control, enlarges the latter so as to tell tales of those organs in the brain, which have produced the various facial expressions.

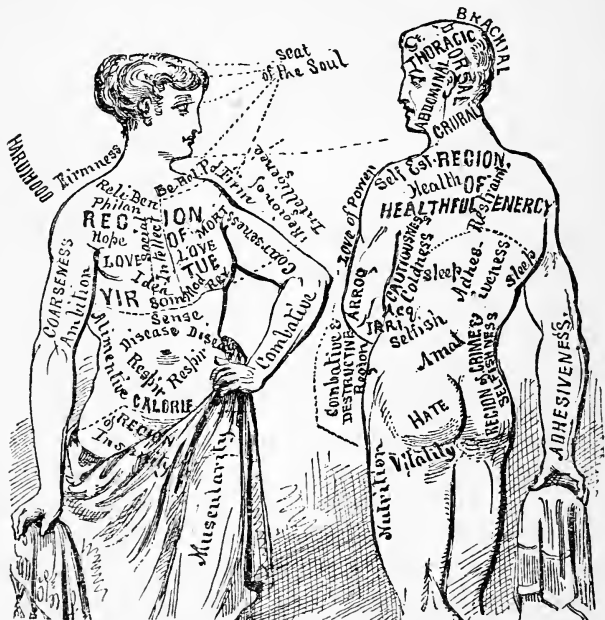
It does not, indeed, require a practised Physiognomist to read the characters of some people in their faces ; and in using the term practised Physiognomist, I mean those who have devoted much time to the application of the science. All observing people are more or less practical Physiognomists. Everybody meeting another body forms some kind of an estimate of the stranger's character by the face he carries about with him ; does it involuntarily—not always correctly. Study of the science is necessary to make one exact in reading what people truly are by their features and facial muscles.

But I must tell you another surprising fact : If

Professor J. R. Buchanan should catch you in swimming, without bathing-dresses on, he would read your characters in your bodies, even if you should hide your faces and heads in the sands of the beach. He proves in his Anthropology before alluded to, that the nerve-fibres reaching out to various parts of the body so influence its development, that there is a kind of Physiognomy which applies to the body as well as to the face. He calls this science Sarcognomy.

You must understand that anatomists have found that every nerve-fibre going out from the brain extends without branching to its appropriate place of termination. When it is considered that there are hundreds of millions of them thus extending from the great centre—the Capitol of the Nervous System, as I nearly twenty years ago named the brain—to every part of the body, it must be appreciated that every square inch of the human system is under the direct control of the brain. Every thought and every emotion thrills and vibrates its appropriate nerve, and this agitation extends to the end of the great toe if the nerve terminates there, just as much as it would agitate the

muscle of the lip or eye if it terminated at either of these points. Let me show you then a copy



OUTLINES OF SARCOGNOMY.

of Professor Buchanan's outlines of Sarcognomy, which I here do in a nearly full-page picture. It is

much reduced in size from the original, to give it room in these pages, but it can be read-with care, and will repay patient study. Put your magnifying-glasses over it if necessary to make out all the names.

The author of this system gives us in his work evidence of the sympathetic connection between the intellectual faculties located in the front part of the brain and the region occupied by the breast-bone, or sternum. Also the reasons for believing that the higher affectional organs influence the development of the chest on either side of the breast-bone. Here, he says, are the places where we are thrilled by emotions of hope, love, benevolence, patriotism, and reverence, giving prominence without depth to the upper part of the chest, while the back part of the same region is made deeper and broader by the exercise of those organs whose location is marked on the back over the region of the lungs in the right-hand figure. In other words, the gentler thoughts and emotions of the front brain give prominence without depth to the chest, while the exercise of the more energetic faculties of the back brain impart both depth and breadth to the chest.

“The correspondence between the body and the brain is such,” says Professor Buchanan, “that we may say that the upper portion of the brain and the upper portion of the body correspond, and the lower portion of the brain below a line drawn just above the orifices of the ear, from the face to the back-head, corresponds to the lower half of the person. The organs of the front half of the brain correspond with the front surface of the body, and the back half coincides with the arms and back surface. The organs of the neck coincide with the lower limbs, and the corresponding region of the arms is found on the middle of the upper back-head.” He traces the relation between the organs of disease, fear, and sensibility, to the abdominal region under the margin of the ribs. In speaking of the influence of this portion of the body upon the health, he says :

“The fact which points to this location is the existence therein of a great centre for morbid influences. The blood, in passing through every portion of the system, acquires a peculiar character from the influence of each part. In the lungs, for example, the blood attains its highest degree of

vitalization. As every secreting organ separates peculiar elements, and all other parts of the body are continually taking from the blood their appropriate nourishment, and giving back to it their waste material, there are greater varieties in the quality of the blood in different parts of the body than chemistry has yet described. The blood of what are called the portal vessels, located in the region we are speaking of, collects from the intestines to go to the liver, and is more impure than that of any other portion of the body. It possesses qualities which, were they scattered throughout the blood tubes of the body, would place the latter in a general state of disease, if indeed they did not produce death. This bad blood of the portal vessels undergoes double purification, first by the liver, and then by the lungs, before it is fit to re-enter the general circulation."

"The accumulation of the blood in the region under consideration is one of the most common features of disease. In proportion as the disease is more general, and less strictly local, it is characterized by a congestion of the portal vessels. That is by their being unduly pressed full of the impure

blood which in health passes readily through them. Fear and every other mental condition which causes this congestion tends to enfeeble the health and invite the attack of disease, while active exercise and everything which causes the blood to flow towards the surface of the body and into the limbs in equal quantities, helps to maintain health." Professor Buchanan believes that the organs marked Sensibility, Fear, and Disease in his outlines of Phrenology exert a direct influence upon the activity of the portal vessels, and he has made many interesting experiments which tend to confirm this belief.

The same writer locates the selfish and evil propensities below the waist on the lower part of the back. Irritability lies at the margin of the ribs nearly on a level with the elbows, and is marked "Irri." Right above it is Acquisitiveness, or the desire for gain, marked "Acq." The combative and destructive region lies along the back from and including "Selfish" down to and including "Hate," and not along the outer surface of the hips as might possibly be implied from the fact of the names being printed there. The space be-

tween "acq" and "vitality" on either side may be said to define the combative and destructive regions. It will also be observed that Combative-ness has its nerve-lines extending along the back of the fore-arm and Adhesiveness its lines along the inside of the forearm. Vitality is located where the thigh joins the body. Nutrition is just back of the outside of the thigh. "Amat" stands for Amativeness, and that is situated at the point where the spinal bones unite with those of the pelvis.

Professor Buchanan refers to all those located along the lower part of the back as the baser organs, and speaks of the feelings of unpleasantness and disgust which are associated with the lower parts of the body. While admitting the existence of such a sentiment I must enter my protest against it, and for reasons that will find expression before the close of this series. Suffice it to say in this place that the sentiment is, in the opinion of many intelligent and Christian people, due simply to centuries of false education.

Below the knees the legs are not mapped off to any great extent, but in the original picture look

as bare as some of our unexplored territories do in our school atlases. The author, however, remarks that the Sarcognomy of the legs corresponds mainly with that of the arms. Whether future Sarcognomists will be able to make new discoveries in these regions of the body, time will determine.



ANOTHER LOOK AT THE HEAD.

We will return again to the upper part of one of the figures, where we have left some hard names which should be defined and explained. For this purpose we will make a large copy of the head of the figure, and place it where we can refer to it more conveniently. The word Thoracic always refers to the region of the chest. Hence the front upper part of the head is so marked, because the action of the brain in this locality exercises an influence over the upper front portions of the chest. Brachial refers to the

arms and the back upper part of the head is thus designated because the brain in this region exerts an influence over the development of the arms and shoulders. For instance, a well developed back-head goes with well-developed shoulders and shoulder-blades, indicating hardihood or toughness, firmness, health, and energy ; and also well developed arms indicate combativeness, ambition, and, unless largely controlled by a well developed front brain, coarseness. The word Dorsal refers to the back, and is placed over those regions of the brain which influence the development of the back of the body in what is called the Dorsal region. This extends from the neck to about where the elbows touch when thrown downward and backward. Crural is a term applied to what belongs to the legs ; therefore Professor Buchanan marks that portion of the brain which has so much to do with muscular motion, Crural.

Abdominal is placed over those organs which influence that portion of the front of the body below the waist. And here we reach some very interesting facts in Cerebral Physiology as pointed out by Professor Buchanan. I have already

alluded to some of them in speaking of the influence of certain organs of the brain over the portal vessels. To make them plain I will give a diagram of the human head mapped off somewhat more extensively than the one in the picture already given.



A SUGGESTIVE CHART.

Look at this one carefully, as it will be referred to again on page 203, where the pair of nerves called the Pneumogastric will be described. All who are interested in the facts relating to the peculiar influence of the mind over the body, will observe much that is suggestive herein.

The region marked Pulmonic is claimed to have special control over the lungs; the organs in the region marked Cardiac control the heart's action; Hepatic designates the locality of those organs

which presides over the liver ; Gastric, those which give attention to the stomach ; and Renal is placed over the region which is claimed to have control of the kidneys. Morbid, in the region of the cheek-bone, is the place to look for the signs of an infirm constitution. Breadth of face between the cheek-bones, unless there is a large development of the head in the Brachial region, indicates a constitution easily affected by disease ; in other words, one that is susceptible to disease. If the face is narrow between the cheek-bones and the head high and broad in the Brachial region, this formation indicates a constitution which possesses great power to resist disease. Great breadth of neck below the jaws at the point marked Insane, indicates a tendency to insanity, if the brain is not sufficiently developed in the Brachial region to overcome that tendency. Depression in the latter region and great breadth in the former marks a constitution which is very liable, on the approach of trouble or illness, to lose its mental balance. All of these facts which Professor Buchanan brings evidence to sustain are of special value to the physician, and may be profitably studied by every-

body ; for there are not many who know the peculiarities of their own constitution.

In magnetizing the head, the passes of agreeable hands from the region marked Morbid on the sides of the face, directly backward and upward to a point marked Healthful, for some moments, and the gentle movements of the palms of the hands up and down for a few moments more upon the Brachial region is very energizing. Rapid passes then made downward with the ends of the fingers over the Dorsal and Crural regions as marked upon the head, help very much the other passes in relieving headache. A little book entitled "Babbitt's Health Guide," gives some very valuable suggestions in regard to magnetic manipulations, and the system of the author is based, in a measure, upon the science of Sarcognomy as taught by Professor Buchanan.

It was my design at the outset to call the attention of the reader to all the points marked in the picture entitled "Outlines of Sarcognomy," but I fear I am wearying your patience. We have, however, been simply going over the ground that Sammy and the Doctor have been investigating

even more thoroughly than we have, every moment of their leisure to-day. The young lecturer has been as busy in making ready for the parts he is to take at the masked party this evening as if he had been preparing for some grand occasion at the



THE SURGICAL FARCE.

Academy of Music. He has just been teaching Sponsie Number 2 to be the subject of a surgical operation. Immediately after the latter is shot by Sponsie Number 1, he falls, and, drawing up one of his own legs convulsively into his pantaloons, he

pushes down through a hole in his pocket, contracted by a rubber ring, a black sheep's leg with much the same convulsive effort as if the same wounded leg had again descended that was drawn up but a moment before. The borrowed leg has been made to look as if it had been shot through at the ankle-joint. If you had looked into Sammy's room about an hour ago, you would have seen him bending over the terribly wounded monkey in the act of amputating the foot at the ankle-joint.

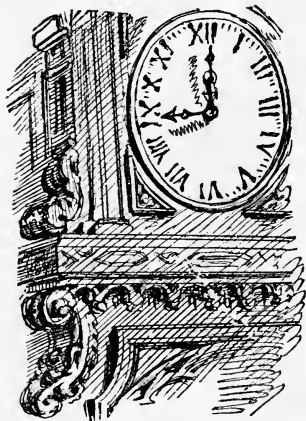
Our young lecturer has provided himself with a plenty of sheep's legs, obtained from the butcher, with which to rehearse and then to carry out the farce at the party. This last operation has been a perfect success in every respect, Sponsie Number 2 having performed his part bravely. It really looked as if Sammy was taking off one of the monkey's feet, so dexterously did the little soldier draw up his own leg and put out the borrowed one. It is to be hoped that some of the nervous and excessively sensitive ones may not be so deceived as to turn deathly white and go off in a swoon when this trick is enacted. If any of them

are broad in the face between the regions marked Sensibility on the chart, they had better leave the room. We will see. Good-by till nine o'clock.



CHAPTER VII.

NINE O'CLOCK—A CARRIAGE CALLS FOR SAMMY
—THE REMARKS OF HIS CLASS—HIS ARRIVAL
AT THE MASKED PARTY—WHY THE MASKED
YOUNG PEOPLE COULD NOT CLEARLY HEAR
THE MUSIC—SOMETHING ABOUT EARS AND
EYES—LIVELY TIMES AND LOTS OF SPORT.



NE-E, two-o-o, three-
e-e, four-r-r, five-ve,
six-z-z, seven-n-n, eight
-t, nine-n-ne, measur-
edly rolls out in atmos-
pheric waves from the
tall tower of the church
on Madison Square.
Soon our little lecturer
will return from his
class in Twenty-seventh
Street. One important
matter has escaped his
attention. He has made no arrangements for the
transportation of his zoölogical show from the

house of his preceptor to the mansion of the Bidlewickers on Madison Avenue. If he should start out in mask with his disorderly privates, thinking to reach the scene of his evening's adventures by stage or horse-car, he might find himself and his grotesque companions in the "lock-up," where Sponsie Number 1 has already had some personal experience on at least two former occasions. Or, if such an odd-looking group should attempt to go up the avenue on foot, it would frighten timid people into dodging under front steps and seeking refuge in strange basements.

But while I am musing in this way, a close carriage rolls up to the door and both Sammy and his preceptor jump out. Ah! the Doctor did not forget this indispensable provision. At precisely nine o'clock, the same carriage drew up with the stirring crack of the driver's whip, in front of the Johnson Dispensary, so that at the moment the young lecturer concluded his exercises, he found his thoughtful friend awaiting his appearance. As the throng of colored people passed out of Sammy's house, there was not a little curiosity manifested by nearly all of them to know whose

carriage that was and why it was standing there. Their perplexity was dispelled when they heard the Doctor throw open the carriage door and call to the young lecturer as he emerged from the house somewhat behind the rest.

This little incident drew forth many flattering comments from those who stopped to see what was going on ; some of them attributing it to the fact that Sammy was rapidly rising in the world, and giving him the entire credit for his remarkable progress ; while others bestowed their eulogies upon the Doctor, to whom they seemed to think Sammy was wholly indebted for the enviable position which he had so speedily attained. Some expressed themselves as wishing they were as smart as Sammy, and others, young Diggles among them, who, regarding themselves naturally just as bright, wished they could only have Sammy's chance.

Our young lecturer, on reaching his room, soon stowed away the external indications of his sarcogony in a captain's uniform ; and by the help of Bridget the monkeys were speedily dressed and masked, for Sammy had provided some odd-

looking paper faces to conceal their sad physiognomies. I will give you a picture as they all looked descending the steps to take the carriage. The bundle in Sammy's right hand is the costume he will put on when he takes the character of a vil-



STARTING FOR THE PARTY.

lage doctor. Reaching the Biddlewicker's, Minnie, who is standing in the parlor door, as yet unmasked, extending her hospitable hand to some new-comers, is absolutely startled with fright as well as surprise as Sammy and his party are ad-

mitted by the servant, and go bounding rather than walking or running upstairs to the dressing-room, whither they had been directed by the polite usher.

“What odd-looking folks!” she exclaimed in an undertone to her mother. “Did you see them?” (Minnie, of course, does not know that two of the group are real live monkeys. Nor did Sammy realize that in springing upstairs with his mischievous companions he involuntarily assumed their gait.)

“They were strange-looking people,” replied Mrs. Biddlewicker, pinching her lips in her efforts to restrain her merriment. Then suddenly turning from her daughter to Mrs. Millstone, who was sitting not far off, she whispered:

“They’ve come! They’ve come!”

By this time, now about ten o’clock, the parlors had become nearly filled with young people in every imaginable costume, and disguised with masks of every conceivable pattern; many of them very comical. But possibly through fear of detection by the sounds of their voices if they should speak, or because they were too timid to say

anything, the place had been nearly as quiet as a Quaker-meeting, excepting now and then a rustling of dresses caused by the movement of the feet, or the bowing of heads, as additional ones, singly or in couples, entered the room, or again as some timid fingers would touch the keys of the piano.

Mrs. Biddlewicker now thought it quite time that everybody was on the move, and to give more animation to the strange-looking people sitting around in such silence, she put a professional player at the piano, and by his side a harpist, violinist, and an expert on the cornet. Had the



THE MUSICIANS.

young people been unmasked they could hardly have resisted the expected effect. But their ears were nearly or quite covered by the paper-masks, which prevented the stirring stimulus from reaching with full force the three thousand nerve filaments with

which each auditory nerve is provided for gathering up sounds and carrying them to the brain. Even if orifices had been made through the masks opposite the open places in the ears, the hearing would not have been perfect, for all the little curves and ridges in the outer ear assist us in hearing. They present surfaces in nearly every direction for gathering up sounds and conveying them to the filaments of the auditory nerve. The musical instruments did their part, and set in motion by the vibrations of strings and the breath-currents through the cornet, such waves of air as could not have failed to reach the harps which the nerves have formed by their numerous fibres in the inner cavity of the ear, if the peculiar instruments which Nature has provided for gathering up those atmospheric waves had not in this instance been covered up. The fingers of the pianist bounded over the key-board ; the harpist moved his head as well as his hands as his nimble fingers leaped from string to string ; the right elbow of the violinist jumped rapidly about under the nerve impulses sent from his brain as his bow danced merrily forward and backward across

his violin; the cheeks of the cornet-player swelled out like the sides of a big red apple, as he filled his instrument with air waves which passed through it with force enough to reach every unobstructed ear in the room.

In spite of all this, each one sat looking and bowing at the other without leaving a chair or uttering a clearly audible word, till Sammy and the two Sponsies entered. This event was like uncorking a bottle of lightning, if it were possible to bottle the subtle fluid and set it free by cutting the strings which held down the stopple. The Sponsies were not timid, nor were they fearful of being detected. They were in for fun wherever it could be found, or for mischief, if more innocent amusement was not attainable. They bounded through the parlors as if every one of the three thousand nerve filaments of their ears terminated in their feet and toes. Every atmospheric wave from the musical instruments filled their ears and moved every nerve and muscle of their agile bodies.

First they went leap-frog across the floor through the front to the back parlor and back

again; a trick that Sammy had taught them at the very last moment. This brought every one



THE DEBUT OF SAMMY AND THE TWO SPONSIES.

to his and her feet, and set in motion from every individual mouth waves of air which reached the ear in the form of what we call laughter. In

the midst of the latter Sammy issued at the height of his voice his military commands. He could hardly make himself heard above the uproar, nor would it have been possible for him to have done so, had Nature been less lavish in supplying the ear with nerve filaments with which to gather up sounds. But, as Professor Raymond has said, "every shadow of tone has its corresponding note in the ear, and becomes in our mind a sound." Hence in spite of the music of the four instruments and the hilarity of nearly a hundred young people who were convulsed with laughter, or, in scientific terms, in the midst of the greatest mixture of air waves falling upon the ear from all possible directions, the words of command were heard, and the monkeys gave up their disorderly frisking for more orderly exercise. As the two Sponsies were going through their military drill, the greatest curiosity was manifested by all present to know what they really were.

"Are they real monkeys, do you suppose?" was overheard from the lips of one.

"I think they are small boys disguised as monkeys," is the reply of another.

“That one that has charge of them is a bright young fellow,” said a young lady of about sixteen disguised in the costume of a peasant-girl.

On reaching the farce of the sham fight many are frightened by the sharp successive cracks of the miniature muskets, and when they see that one has fallen, several voices cry out in confusion :

“It’s a shame !” “Oh ! it’s a shame !” “One of these little creatures is shot, is shot sure !” “They are monkeys—see their feet !” “He is shot in his paw !” “Oh, it is too bad, it is too bad,” and many other such exclamations fall excitedly from the lips of those who gather around the prostrate soldier, who is quivering as if in pain, and extending his wounded borrowed leg.

Sammy had disappeared meanwhile for a moment to change his mask and costume. But before the company had finished their ejaculations of sympathy and dissatisfaction, our young lecturer reappeared, dressed as a village physician, with gold spectacles on his nose and a case of surgical instruments in his hand.

A table was quickly brought in by a servant

who had been directed by Mrs. Millstone, and the wounded soldier was stretched upon it.

“ Why, he’s going to cut his leg off ! ” “ Oh ! don’t do that ! ” “ Oh, that is awful ! ” “ I wish I hadn’t come ! ” “ Oh, dear ! oh dear ! ”—These and all sorts of denunciatory and despairing exclamations issued with deep-drawn sighs from the group of bystanders, and some of them were on the point of seizing Sammy’s hands as he proceeded coolly to amputate the foot.

I cannot tell you the consternation which was depicted in the pathognomy of each one who witnessed this seemingly cruel operation. Professor Buchanan tells us that every emotion of the mind is accompanied with a certain posture of the body peculiar to that emotion. If one is suffering from grief, the head and other portions of the body assume an attitude in perfect keeping with this feeling. There is an attitude of pleasure ; of horror ; of disgust ; of defiance ; of affection, etc., and the science which treats of these emotions of the mind with their corresponding postures he has named pathognomy, although the same word is employed by the medical profession for some other purposes.

As a matter of course I cannot tell you what expressions the faces of the young people really bore, for these were masked. Their physiognomical indications were hidden from view, but their pathognomical signs depicted sympathy, fear, horror, and denunciation. A few gave the pathognomic signs of pleasure and satisfaction. They instinctively saw through the whole of it, for their perceptive organs were prominent, and in whispers they pronounced the verdict that nothing was ever more cleverly done.

After the removal of the foot, Sponsie Number 2 drew back the sheep's leg so that it was held by the rubber-ring in the open end of his pocket. Then seizing a crutch which had been provided for him, he started off upon it as if the operation had been performed ten years rather than ten seconds before.

Here the drama was defective ; it betrayed the farcical nature of the tragedy to the wiser ones, who at once broke into uproarious laughter.

“ But he certainly cut the foot off ! ” said one ; “ I was right close by him and saw him do it, ” urged another ; “ I saw the blood run and the leg

quiver as the knife was used!" exclaimed the third; "I saw the foot after it was removed," confidently affirmed the fourth, with eyes almost protruding with surprise through two large holes



THOSE WHO KNEW THE FOOT WAS CUT OFF!

in the mask in front of the visual organs, as the eyes are called.

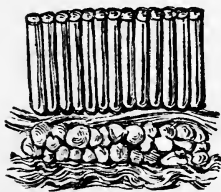
But the eye will be deceived sometimes, notwithstanding the fact that the large nerve passing out from the back of it to communicate to the brain what is passing before it is provided with not less

than one hundred thousand nerve fibres with which to catch glimpses of surrounding objects. The masks may have furnished some obstructions, but even with good, unfettered eyes a person may sometimes be deceived.

Nevertheless, be it said, the eye is a marvel of perfection. Let us stop here for one moment to examine it; the white of your eye is called the sclerotic. It envelops all of the organ, excepting a small place in front and an aperture large enough in the back for the optic nerve to pass through. The circular spot in front, which in some persons is blue, in others gray, and in many all shades of color from brown to black, is called the iris, and this is protected externally by a tough, transparent membrane, clear as glass, called the cornea. In the centre of the iris is the pupil, which is under the control of the latter. In other words, the iris with its little fibres can open or close the pupil just as you open and close your mouth. If the room be very light the iris will contract the pupil to prevent the admission of too much light into the inner portion of the eye. When you first enter a light room from a dark apartment you are dazzled by

the excessive light till the iris has time to adjust this little circular window by making it smaller. If you go from an illuminated room to one which has but little light you can see nothing till the iris enlarges the window, or pupil, as it is called. The image of an object passes through first the cornea, then the aqueous lens (a lens of water) immediately behind it, then through the crystalline lens, which is composed of a clear, tough substance, and finally through the vitreous body, which is a jelly-like, transparent fluid, filling the inside of the eye; here at last the image falls upon the nerves of the eye. Between this vitreous body and a dark lining of the sclerotic, called the choroid, the optic nerve expands, presenting a surface called the retina. Upon this surface, as has been remarked, the image finally falls, and is by it communicated through the optic nerve to the seat of intelligence—the brain. Microscopists say that the inner lining of the retina is composed of rods set closely together like so many stakes driven into its bed one against the other, and these very likely are the terminal points of the hundred thousand distinct fibres with which the optic nerve is said to

be provided for the purpose of gathering up the images of various objects, just as the three thousand filaments of the auditory nerve are placed in the inner part of the ear to gather up all varieties of sounds. Very wonderful! you will all exclaim.



MICROSCOPIC VIEW
OF THE RODS.

Yes, and what is most wonderful of all, is just how, after all, we become conscious of these sights and sounds after they have been duly communicated through these peculiar nerves to the brain.

But I will not dwell too long upon this incidental and not altogether relevant matter. Before leaving it, however, allow me to caution you against spoiling your eyes by carelessly rubbing them. You know when you look at the sun, or when your eyes have either a sensation of itching or dullness, you are apt to carelessly poke the finger or knuckle into your eye, and rub it. Now this practice flattens the cornea, or face of the eye, and when, after years of such habit, the cornea be-

comes considerably flattened, you will have to wear what are called convex spectacles. Nearly every man and woman before reaching the age of fifty years, and many before forty, find themselves compelled to adopt glasses. They say that age has impaired their sight. But I will tell you something they do not know: age does not do it; at least it does not in many cases. All, or nearly all of them, during the forty or fifty years they have lived, have been in the habit of carelessly rubbing their eyes when those organs have felt uncomfortable from any cause; this mechanical pressure on the face of the eye has gradually lessened its fullness, and they have been simply compelled to adopt glasses of sufficient convexity to make up for this loss of fullness. John Quincy Adams knew better than to injure his eyes by careless manipulation, and the result was that he never had to wear glasses, notwithstanding the fact that he lived to the good age of eighty-one years. When your eyes are tired or feel badly from any cause, do as this great man did: carefully make passes with the thumb and finger from the outer edges of the eyes towards the bridge of the

nose. This practice tends to promote fullness of the cornea.

We will return to the lively scenes which are being enacted at the parlors of Mrs. Biddlewicker.



SPONSIE NUMBER 2 AND HIS PARTNER.

All the young people would carelessly rub their puzzled eyes, if their masks would only allow them to do so, to find out if possible whether or not Sponsie Number 2 has really lost a foot. He is dancing in a quadrille with a little miss of about twelve years; pretty or not, being masked, it is difficult to state. Sarcognomy does not help

us out here, because the younger as well as the older ones use a great many things to give fullness of figure and perfection of form to the vision when these proportions do not actually exist. Here, too, the hundred thousand nerve-fibres of the optic

nerve fail to detect the deception. The little girl is completely masked, for her phrenology is thoroughly disguised by her head-dress ; her physiognomy by her mask, and her sarcognomy by

any quantity of silk and velvet. Nor can she tell with certainty whether she is dancing with a small boy or a monkey, or whether or not said small boy or monkey has lost a part of one of his limbs, for he sticks to his crutch as if he could not go through the steps without it. Each one in the set keeps his and her



eyes on the little fellow, biting their lips when they

SPONSIE NUMBER I AND HIS PARTNER.

suppose the small boy is doing some improper thing, and laughing heartily when he performs some trick which leads them to think that he must certainly belong to the monkey family.

Sponsie Number I has for a partner a fat lady

who would contest the balance with a two-hundred-pound weight. He seems to think, however, that those pounds count something towards weight of character, for he struts about as if he were a



THE PEASANT GIRL.

French dancing-master leading his huge pupil through the intricate mazes of the dance. Perhaps he is priding himself upon his military rather than his civic achievements, for since he has acquired the bravery to shoot off a real gun, he has exhibited a great deal of importance. Especially has this feeling been manifested since he has shot his man. If he be priding himself upon this deed of blood, we can better forgive him than we could if he were a man instead of a monkey. No person who has developed his faculties and powers to that degree which entitles him

to be called a MAN—"the noblest work of God"—will ever take pride in inflicting a wound, mental or physical, upon his fellow man. If occasion compels him, his pathognomonic signs will be those of humility and sorrow.

"Where is Sammy?" doubtless all my young readers would give a big orange to know.

He is having a good time with the young miss in the Peasant's dress. Four or five others have contested her efforts to monopolize the young doctor, and one, taking the



THE INDIAN GIRL.

character of an Indian girl, has occasionally succeeded in getting Sammy away from her. Just now the little Peasant is leaning very affectionately against his athletic shoulder, engaged in close conversation as the "sides" are taking their turn in the

quadrille. Her dress is such that Sammy gets a better glimpse of her sarcognomy than he can of that of most of the others, and with his knowledge of the science, he feels confident that his partner has regular and attractive features behind the mask which hides them from view. He is also pretty well satisfied that the Indian girl is worth having, for her sarcognomy is not so hidden by dress as to be altogether incomprehensible. It is unquestionably Sammy's knowledge of this science which has led him to be more attracted to these two young ladies than to any others of the many present arrayed in more gorgeous costumes.

Having found out who these two favorites are, I will intrust my readers with the secret. The Peasant girl is the daughter of Mr. Barkenstir, the wealthy cotton-broker who lives in Fifth Avenue. Her name is Julia, and Sammy is quite right in supposing that she is a magnificent-looking young lady. The Indian girl is the niece and adopted daughter of old Mrs. Beckendecker, a relict of one of the old Knickerbocker families residing on Lexington Avenue. The nose of this young lady is quite too prominent to harmonize well

with her other features, but she is really a handsome brunette, bearing the rare name of Marvellie, while her more successful rival is a sweet-looking blonde.

While I have been telling you all this the quadrille has been concluded, and the young people have repaired to their dressing-rooms to fix up a little, and give time to arrange the parlors for the lecture. With your leave your reporter will go out and take an airing while these preparations are being made, and then he will give you all further particulars of the Biddlewicker party in another chapter.



CHAPTER VIII.

THE LECTURE—SAMMY'S ADMIRERS SECURE THE FRONT SEATS—THE WAY IN WHICH WE HEAR, ETC.—THE CONTEST BETWEEN THE PEASANT GIRL AND INDIAN GIRL FOR SAMMY—THE LATTER WINS—AND DESERTS HIM WHEN SHE FINDS HE IS BLACK—THE GRACIOUS ACT OF THE PEASANT GIRL—THE TRIUMPH OF SAMMY'S NOBILITY OF MIND.



CASUAL peep through the lace curtains, which have the ingenious absurdity of concealing everything by daylight and of revealing everything by gaslight, presents to our visual organs the evidence that the young people are all seated, and are either listening to, or waiting for, the young lecturer. We will therefore re-enter the parlors of the Biddlewickers. Be quiet! Sammy

is speaking. We must step lightly or the sound-waves from the friction of our sole-leather will fall upon the ear-drums of the listeners in a way to make them conscious of the fact that what are called squeaking boots are in motion. Of course no sound in fact proceeds from such boots, they simply set in motion curious waves of air which report themselves to our auditory nerve in a way which in our language we have named squeaking. Every language doubtless has its distinctive name for the sound produced in the human ear by the friction of two or three layers of dry sole-leather when pressed and bent by our feet in the act of walking.

Sammy is standing upon a dry-goods box over which an old piano-cover has been thrown. He retains the mask and costume of a village doctor. But who are those immediately before him?

In the very first row of seats the young ladies who have pursued our young lecturer the whole evening have enthusiastically gathered. Right face to face with him in this row is the Peasant girl. She is generally successful in getting the start of the Indian girl, who is just now seated

immediately on her left. On her right is one of the lecturer's ardent admirers in the costume of a nun. When Sammy gets off something especially good they clap their hands and vie with each other in manifesting appreciation. The



SAMMY'S FRONT SEAT ADMIRERS.

whole front row, indeed, do this ; for while only four or five in the earlier part of the evening sought the young man's attention, more than double that number now enjoy nothing that is not illuminated with his black eyes glistening

behind his mask, and enlivened with his musical voice. Every one of them is an infatuated adorer, and they all feel certain in their own minds that one who is so manly in form and action, and so mentally gifted, as this young man seems to be, must conceal still other attractions behind the expressionless mask which hides his natural features.

I am informed by a gentleman at my elbow that the young man has been speaking for over forty minutes and that I have lost a great deal by my absence. Sorry for that. It seems that Sammy has rapidly run over the sciences of Phrenology, Physiognomy, Sarcognomy, and Pathognomy, and illustrated his lecture with several interesting charts, probably the same ones I have shown my readers in a former chapter. My informant remarks that "if the young man has not received very much assistance in the preparation of his lecture, he is a remarkable fellow and will be sure to make his mark in the world. His voice," he adds, "betrays his youth."

As I entered he was explaining something of the mechanism of the eye. Just now he is speaking of the ear. Let us open our ears and listen.

“While I am speaking,” says the young lecturer, “the air which I expel from my vocal organs sets in corresponding motion the atmosphere between each of you and myself. These waves of air are gathered by the outer ear and carried quivering with motion, given them by my tongue and lips, to your ear-drum. Then this membrane, which extends across the orifice of the ear to modify the harshness of the waves when they are propelled with too much force, communicates the same motions to a chain of bones which is stretched across the middle ear, a cavity of the size and form of a kidney bean. This cavity is ingeniously supplied with air by two tubes called the Eustachian, which connect it with the passage to the throat, and the air occupying this cavity moves in accord with the impulse which the chain of bones has received. These waves, thus modified and prepared for their further journey, move onward through irregular cavities and circuitous canals to what is called the inner ear, where they agitate just such fibres belonging to the auditory nerve as are adapted to receive them. Some of these fibres are moved by one kind of a wave,

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and others by still those of another kind, so that waves of air of a different character may enter the ear at one time and communicate through their appropriate nerve-fibres the motion peculiar to each, and it is in this way that we are made conscious of a variety of sounds at one and the same time. The three thousand nerve-filaments of the auditory nerve are called after the anatomist who discovered them the fibres of Corti. These, as remarked by Le Pileur, "give four hundred sensitive cords to each octave, of which the interval or space is one sixty-sixth of a note. It is," remarks this writer, "easy to understand from this how a cultivated ear can appreciate the slightest difference in sounds, just as the eye perceives the least difference in the degrees of light." (Applause from the audience, and especially from the ladies in the front seat.)

"It is further true," remarked the speaker, "that these auditory fibres can be so cultivated as to be thrilled by the psychic faculty, or soul, within, as well as by mechanical waves from without. That is, if anything serious happens to the outer parts of a well-cultivated ear, so that the waves from ex-

ternal sources are not communicated to the fibres of Corti, then impulses, not waves of air, may be sent through the auditory nerve from the psychic faculty or soul to agitate these fibres so that they will convey to the mind imaginary sounds of perfect accuracy. This bit of philosophy will account for the remarkable facts related of Beethoven by Le Pileur, who tells us that this celebrated composer became deaf at forty, notwithstanding which infirmity he composed all those immortal works which for himself were never performed except in his mind."

This extraordinary passage from the lips of our young lecturer brought a perfect storm of applause from the hundred odd-looking masked people who thronged the parlors.

One in particular ascended a chair and enthusiastically waved his handkerchief. This was Doctor Hubbs. Don't you tell. He came in just before the lecture commenced, and is disguised in the costume of the "Heathen Chinee." There is nothing unfair in his taking this course, inasmuch as everybody else is masked, and masked parties are expected to be composed of at least some of

our best friends in disguise. Sammy's way for accounting for the strange facts related of Beethoven took him by surprise. It was philosophical and without doubt original. The Doctor is therefore perfectly enraptured with his pupil, and he only hopes that all can appreciate this lecture as he himself is doing; for whatever preparation he gives Sammy for any occasion is exceeded in its results by the boy's own inspiration.

"This fact," resumed the young lecturer, after the applause had in a great measure subsided, "brings us to the ques-

tion—Can a nerve-fibre leading out to any part of the body from the brain be acted upon at either end in such a manner as to physically influence the extremity opposite the one to which



DR. HUBBS AS A HEATHEN
CHINEE.

the stimulus is applied? If it cannot, then sarcognomy cannot be reliable. If it cannot, then the advice of Brown-Séguard, that if we want to develop and render more active the right side of the brain, we must exercise the left side of the body, is useless. But this authority tells us that by exercising the left side of the body, which is in direct nervous communication with the right side of the brain, the latter will be supplied more bountifully with blood, and in consequence of this greater nutrition will become more active and useful. Then it must be equally true that if Professor Buchanan has rightly located the ends of the nerve-fibres which proceed from the various groups of phrenological organs in the brain to certain described portions of the body, the exercise of these bodily parts where such nerves do terminate must give impulse to the circulation of the blood in those mental organs with which they communicate; hence, greater development and greater activity to them."

This was the unfolding of another new idea, as it fell in communicative waves upon the Doctor's ear, for although he had not found leisure to read

Professor Buchanan's Anthropology through, he believed that this application of the law laid down by Brown-Séquard was original in Sammy's brain. Of course the parlors were filled with the mixed and tumultuous waves of air, which communicated to the conscious sense of every one present the sound of wild applause, when the young lecturer gave utterance to this self-evident statement.

"Hence," resumed Sammy, "while you are exercising your arms and limbs to-night, you are giving to your brains greater possibilities, or in other words, you are sending them the material for additional convolutions and nerve-tracks; and while you are exercising your social and intellectual faculties you are developing your thoracic region; for when you thrill the brain-ends of your social



THE LITTLE NUN.

and intellectual nerves, the body ends are agitated thereby and the circulation of blood in the tissues about them is rendered more active. Then, according to the laws of muscular development, this additional circulation must impart growth."

During a perfect storm of applause the young lecturer thanked the audience for their attention and appreciation, and stepped grandly from the platform. In an instant he was surrounded, not only by his front-seat admirers, but by gentlemen and ladies from other portions of the room, who pressed forward to thank him for the lecture in which he had succeeded in making difficult subjects wonderfully clear. There was a general inquiry of "Who is he?" and an almost audible whisper going around to the effect that—"he is a brilliant young fellow, whoever he is!"

Immediately after the lecture, refreshments were announced, and it had been arranged that at a given signal at the tables the masks should come off. There was almost a rude elbowing among Sammy's front-seat admirers to place themselves where it would be convenient for the young lecturer to ask one of them to take his arm. Each tried to

get in front of the other. Roman physiognomy, like Roman valor of old, triumphed over Grecian beauty, and the young lady in the costume of the Indian girl marched off proudly with the one who had been the centre of attraction throughout the evening. The poor Peasant girl after this declined to take anybody's arm. Several gentlemen of cultivated manners offered her an escort, but to each one she gave, in something of a petulant tone, which she tried hard to conceal, a "Thank you," accompanied with the remark that she was not feeling quite well, and did not care to tempt herself with the good things which Mrs. Biddlewicker had doubtless provided. So she sat demurely in the corner, and fanned herself, after all had gone, and she threw back her mask to obtain the full benefit of the air, to which she was communicating her own agitation by the pretty instrument of sandal-wood which she was nervously moving. Much against Sammy's wishes, Roman physiognomy again conquered on reaching the refreshment room, for she secured two of the most conspicuous seats at the extreme end of the table, where she chatted rapidly, and so waved her huge fan, as to

carry the artificial breezes under her escort's as well as under her own mask. Each of the Spon-sies had a partner, and while the latter believed their escorts were real live monkeys, they did not



MISS JULIA BARKENSTIR

GRIEVING OVER HER DEFEAT.

know but that the surprises of a masked party might reveal them as two small boys in monkey's disguise. Those of Sammy's most enthusiastic admirers who came to the table,—and none stayed away but Julia Barkenstir,—managed to get as near the young lecturer and his lucky companion as they could, trusting that they might share with the latter some of the former's attentions. But in the absence of these, there was a pleasure in being in his magnetic atmosphere.

At the signal, which was the shrill chirp of an automatic bird nestling in the apex of a pyramidal

bouquet which rose to the height of fully three feet from the centre of the table, the masks—all but one—were snatched from the faces of the young people by their own impatient hands. The rooms were clamorous with exclamations of surprise for some moments. “I thought you were Gertie!” “I thought you were Johnny Bentley!” “See there! there is Delia Zermers!” “You don’t say that’s you, Jed! I thought you were in Baltimore!” “But look at the knight: I supposed all the time that Ellery was the Highlander!” And so the ejaculations of astonishment on finding out who each other were went the round of the table, loaded with good things, which extended through two large rooms with their folding-doors thrown open. Let us take a peep at Sammy’s end of the table. He retains his mask, greatly to the surprise of the Indian girl, who now shows her naturally commanding brunette face, with somewhat of a Roman outline. She has stopped her gay chattering and is seriously begging her partner to unmask, while all of the front-seat admirers of the young lecturer are looking on with impatient curiosity.

The ladies with the Sponsies have found out

just what their partners are ; for, monkey-like, the latter, in imitation of the rest, dashed their masks aside. But the ladies are greatly pleased with the little, sad, upturned faces as they nibble with characteristic activity some nuts to which they had helped themselves even before the masks had been removed.

The importunities now became so general from all the ladies and from many of the gentlemen, that the one who had so greatly entertained the whole company for the entire evening should reveal himself, that Mrs. Biddlewicker stepped behind his chair and advised him to unmask. She instinctively thought that when he had shown himself not only a gentleman but a scientist, and that too he had aroused in the young people all the conviviality they had exhibited, his color would give no offence.

“ Would you think as much of me as you now profess, if I am black ? ” Sammy inquired in a roguish tone of his partner, who imagined from his manner that it was simply a question asked in jest.

“ Oh ! if you are black, red, or yellow, if you

have a cleft nose and a hare-lip, still will I cling to thee," she exclaimed with a merry laugh, throwing her bewitching black eyes upward and moving her hands dramatically to her bosom for she was an impulsive girl.



THE LECTURER UNMASKED

While this was being uttered, or rather just as the speaker had concluded, Mrs. Millstone playfully stepped behind Sammy and snatched away the mask! I wish my pen could describe the expression of surprise which took possession of every

one, but especially of Marvellie Beckendecker. It is simply useless to try. But I must tell you of Marvellie: for a moment she shrugged her shoulders and drew partially away from her partner, staring at him with eyes glowing with indignation and surprise! Then rudely, aye, cruelly, without one word of apology, she withdrew from the table, and with scornful look and gesture proceeded to the dressing-room. As she passed upstairs, Julia Barkenstir noticed her, and feeling instinctively impressed from her manner that something had happened, she stepped softly down to the door of the refreshment rooms, and peeping in unobserved, her eyes fell full upon the sable young lecturer, whose face was cast forward in an attitude of sorrow as if meditating upon the proper course to pursue. A momentary scowl of disappointment and surprise passed involuntarily over her pretty Grecian face; she saw at a glance the cause of Marvellie's indignation; reflecting for a moment upon the relative value of intellect and true manliness as compared with color of skin and social position, and recalling the admiration which the young man had awakened in her mind while he was concealed behind a mask,

she glided in, and with a gracious bow and sweet voice asked—

“ My dear sir, may I have the pleasure of occupying this vacant chair ? ”

If a fair-haired angel had descended, bearing from the blue ether of heaven the perfumed breath of fraternal love and the holy benediction of our benign Creator—the Great Common Father of the colored as well as of the white race—the effect could not have been more grateful to Sammy’s wounded heart, or more electrical to those who remained. Nearly all of the front-seat admirers of the young lecturer had vacated their places as well as those who were the willing companions of the monkeys. The latter seemed to regard the monkey as a more desirable associate than an educated colored youth. To such strange freaks do our prejudices lead us !

The young lady who had been disguised as a nun ached to take the step that Julia Barkenstir had done, but her courage failed her every time she attempted to rise from her seat. She could have gracefully excused herself to her escort, for he had with him another companion to whom he

had given his left arm previously to having offered her his right. She was, too, the daughter of Mr. Josiah Goodlove, who had been for a quarter of a century a well-known friend of the colored race. Her sympathies were burning for expression ; the revelation of the young man's color did not lessen her admiration for him ; but she lacked the moral courage to step forward under the keen gaze of the surprised and startled people, who were really hesitating between two courses of action : to leave the table, or lionize the smart young colored man. Either door seemed open to them. They could do as some of the rest had done, or they could make such a hero of the sable lecturer as would raise him in dignity to their assumed level and make his presence among them an honor rather than a disgrace. Feeling thus, it is strange that they hesitated for a moment.

The brave and gracious act of Miss Barkenstir added the decisive weight to the humane side of the wavering scale, and carried the sympathies of all present with her. As she took her seat, and looked up with a dignified air of self-possession, her face beaming with satisfaction, she was greeted

with the clapping of hands and the tapping of knives and spoons upon goblets and plates.

It was Sammy's turn now. With that customary sensitiveness and modesty which he had exhibited on so many former occasions, he felt keenly the embarrassment of his own position, and the no less awkward one of Mrs. Biddlewicker, who stood near by, appalled at the result of the little arrangement which she and Mrs. Millstone together had effected; and he felt grieved rather than angered at the prejudice which had been exhibited toward him on account of his color. He arose from his seat, and in a calm, subdued voice related the circumstances which had led him to participate in the festivities given Miss Minnie on the anniversary of her birthday; and proceeded to say that, if there was one person at the table who would prefer to have him withdraw, he would most cordially do so. A pause followed, during which the rustling of a garment or the movement of a foot would have afforded relief. "I will then," resumed the young lecturer, "ask those of you who prefer that I should remain, to signify it in some manner."

Miss Barkenstir and Miss Goodlove clapped their hands and exclaimed, "Stay! stay!" And this word "stay" went around the table with an echo from every tongue, amidst another deafening



THE YOUNG LAWYER.

round of applause. He feelingly thanked all present for their kind applause and words of welcome; and turning gracefully to Miss Barkenstir, he feelingly said—"Whatever may be your prejudices, my heart goes out to you for your constancy; and though you should never give me one word or look of recognition after this evening, I shall ever

remember you with gratitude for your kind condescension in dropping down here by my side at a moment when every sensitive nerve in my body was being thrilled with emotions of mortification and despair."

This neat little speech was followed by clapping of hands and glances of approbation directed to the heroic lady to whom the concluding words were addressed ; to all of which she responded with bows and smiles as melting and bewitching as they were magnetic.

As soon as Sammy had taken his seat, a young lawyer who had accompanied Miss Minnie to the table, and learned from her mouth the history of the young lecturer, arose and offered resolutions as follows :

“ *Resolved*, That a vote of thanks be hereby tendered by the ladies and gentlemen present to Master Samuel Tubbs, for his generous and successful efforts for our amusement and entertainment this evening.

“ *Resolved*, That we recognize him as a man and a brother, notwithstanding the fact that his generous heart and gifted brain are enveloped in a colored cuticle ; furthermore, we welcome him at this festive board as one worthy of our recognition, regard, and encouragement.”

An older head might have been able to frame these resolutions more happily ; but they were

written down hastily, on the spur of the provocation, without a moment's thought. They were seconded by the little nun; and Miss Barkenstir, rising from her chair in a most charming manner, called for the vote, when the resolutions



MISS BARKENSTIR PUTTING
THE QUESTION.

were adopted unanimously amidst a renewal of the clapping of hands: all of which was gratefully acknowledged by Sammy, rising and bowing.

Miss Minnie was in the dressing-room all this time, trying to pacify the indignant ones who did not return to the refreshment-room. Nearly all of the disaffected young ladies and gentlemen went directly home. Dr. Hubbs, unfortunately for Sammy, left immediately on the conclusion of the lecture; but Mrs. Biddlewicker and Mrs. Millstone gave him their sympathy, and used

their personal influence with those of the disaffected who remained, to so good a purpose, that the latter took special pains to bestow their smiles and bows of recognition upon the sable youth.

By the time the parlors were refilled, the festivities of the young people were resumed as if nothing had happened to mar them. Those who had left were hardly missed. Miss Barkenstir felt herself well repaid for what at the outset seemed like a sacrifice of her personal pride ; for she was treated as a heroine for her generous act in filling the chair made so abruptly vacant by the proud Marvellie ; and she found herself in undisputed possession of the brightest young fellow in the room. In every respect, excepting color of skin, which came from the palette of the Great Artist, instead of the stain of crime, Sammy was all that her imagination had pictured him when his face was hidden by the mask. His features were intelligent and attractive, and his conversation instructive and captivating. " If," thought she, " everybody could appear thus noble when Jehovah tears the masks from the whole human family at the last day, no angel spirits would leave the sacramental

table." For the remainder of the evening she clung to him with as much pride as she had done at the outset. And there were not a few who would gladly have been in her place ; for they saw and overheard enough to discover that Sammy was an interesting beau, if he was not a white one.

The monkeys, after refreshments had been served, remained in the basement. They preferred to loiter among the nuts, oranges, and raisins. Nothing but the departure of their young master could have dragged them away from this charming spot. It was like being turned loose in their native haunts of tropical fruits. But at one o'clock there was a call for Master Samuel Tubbs. The Doctor had sent the carriage for him. So, calling his braves from the refreshment-room, he gathered up his things to depart. As he was leaving, no one was more cordially grasped by the hand and blessed with good wishes by all the young people, than the modest, intelligent and dignified young lecturer.



CHAPTER IX.

THE TALK ABOUT THE MASKED PARTY—MR. BARKENSTIR SPEAKS—SO DO MRS. BECKEN-DECKER AND MR. GOODLOVE—A LAUGHABLE ANECDOTE—THE CEREBRO-SPINAL SYSTEM—THE PNEUMOGASTRIC NERVE—SPONSIE NUMBER 2 NEARLY PUTS OUT THE BLACK CAT'S EYE—THE MONKEYS TO BE BANISHED.



the young colored man. Others thought it a

HE remarkable episode related in my last chapter formed the exciting topic of conversation at the breakfast-tables of fifteen or twenty well-to-do up-town families the morning following the party at the Biddlewickers. Some could not see how Mrs. Biddlewicker could possibly have been so short-sighted as to invite

capital joke from beginning to end, without taking into account the shadows in the picture caused by the wounded pride of the disaffected young people, and the wretched feelings of the innocent one whose presence had occasioned all the trouble. Still another class was bitter in its denunciations of those who made an open exhibition of their prejudices by leaving the table, and thereby placing not only the hostess in an embarrassing situation, but cruelly wounding the feelings of a sensitive and cultivated young man, simply because, in the Providence of God, he happened to have a black instead of a white skin.

Among the first class was Mr. Barkenstir, who applauded his daughter for her heroism. Personally, his prejudices against the colored race were as diamond-pointed and cutting in their expression as were those of his most conservative neighbors; but everything that his Julia did was in his estimation perfectly right, and he boasted of her magnanimity and courage to his co-partners and friends when he went to his counting-room the next morning. In his opinion, Mrs. Biddlewicker was a woman of singular indiscretion, who had placed

nearly a hundred young people in an unnecessarily awkward dilemma, from which the self-sacrificing and courageous spirit of his daughter had extricated them at a moment when the festivities of the evening were about to terminate summarily in an open revolt of all present.

To the second class belonged many of the young friends of Marvellie Beckendecker, who told the joke to all of their acquaintances, and pressed their sweet-scented embroidered handkerchiefs to their lips as they nearly exploded with merry laughter. The old lady, the aunt of Marvellie, did not relish the joke so well; and while she approved of the conduct of her niece, she did not censure Mrs. Biddlewicker for having included the young man among her guests. She did not, indeed, trouble herself to analyze the causes of the disturbance, but simply passed favorable judgment upon the resolute manner in which Marvellie resented what she called the "presumption of the darkey;" and as she would bring out this last utterance, something of an asthmatic cough would come with it, showing that her sense of injury was not deeply felt, in view of

the wise course which her spirited niece pursued.

Among the last-named class to which, to the credit of humanity, a majority of the critics belonged, you may confidently expect to find old Mr. Goodlove and Doctor Hubbs. The former made it his first business to call upon the latter and make the acquaintance of the Doctor and his remarkable pupil. He greatly regretted that his own daughter did not make haste to take the part so bravely performed by Miss Julia. He also called upon Mr. Barkenstir, whom he had never had the pleasure of meeting, to congratulate him upon the sublime heroism of his daughter. But he was surprised to find himself surrounded by a winking and fun-making group of cotton-brokers, whose kindness of heart in applauding the act of Julia was more than balanced by bitter, outspoken prejudice to the African race, which they regarded as so vastly inferior to the Caucasian that it could never receive social recognition. "What," said one derisively, "is a darkey, any way, but a cross between the monkey and the cocoa-nut?" In the argument which ensued no one of them cared

to consider how the negro was treated in England or France; in this country they insisted that the existing prejudice would be eternal.

Sammy had never before encountered any of it. He had been so much petted and smiled upon by



MR. GOODLOVE AMONG THE COTTON-BROKERS.

the patients and friends of Dr. Hubbs, that he simply had a faint appreciation of it by what came to his ears through the traditions of his family.

Between one and two o'clock Mrs. Biddlewicker, her daughter Minnie, Mrs. Millstone, old Mr. John-

son, the Doctor and Mrs. Hubbs, and Sammy gathered together like a surprise party, without pre-arrangement, in the Doctor's office, and talked over the exciting affair. In the course of the conversation old Mr. Johnson stated, "that not many months ago, the distinguished Mr. Frederick Douglass was refused a dinner in one of the large hotels in St. Louis, simply because he carried the evidences in his skin that his mother was a black woman. The fact that his father belonged to one of the first families of Virginia did not count for anything," said the old gentleman with a significant smile. He furthermore added that Mr. Douglass once remarked that the whites and blacks ought to get along well together, and that such fraternity could not be impossible when he had peaceably carried about with him the blood of the two races in his own person so many years. This bit of pleasantry had its due effect upon all the conversationalists.

Mrs. Biddlewicker related an anecdote of an occurrence at Troy, which, she said, she read in the *Philadelphia Press*. "The Hampton colored students arrived at the Mansion House, whereupon

the pretty white waiter-girls went in a body to the proprietor and declared they would not wait on the 'niggers.' The proprietor was a sensible man, and stated his troubles to his boarders with a very satisfactory result. The ladies and gentlemen at once volunteered to act as cooks and waiters '*pro tem.*,' and the supper was prepared and the table waited upon. The colored strangers, however, when they seated themselves, discovered the situation, and asked that some of their own number be allowed to attend to the table, and that the ladies and gentlemen sit down. This was refused, and the meal went on, the ladies and gentlemen acting as servants, while the Hampton students were much embarrassed but very grateful."

Dr. Hubbs followed by saying that "the utter disregard of the feelings of educated people so often exhibited by the vulgar and ignorant, simply because the subjects of their dislike are colored, can not much longer be tolerated in a Christian community. It is contrary to the spirit of the age, and must sooner or later yield to nobler impulses. Even if we have prejudices, we must always respect the rights and feelings of others. With all my

prejudices to the use of tobacco," he remarked, " I have been laughing heartily this morning over a tit-bit I found in my newspaper." Taking the paper from his desk, the Doctor, with a face beaming with humor, read the following :



THE VICTIM.

" A lady of truly manly spirit, accompanied by a small poodle, is said to have sadly failed in an attempted reformatory movement the other day. She entered the smoking-car of a Western train and solemnly refused to go into another car, observing that her presence would keep the occupants from smoking. One

stony wretch, however, insensible to the claims of refinement and reform, began to enjoy his accustomed cigar, which was suddenly snatched from his lips, with the remark, in high treble, ' If there is anything I do hate, it is tobacco-smoke ! ' For a

time the offender was silent, and motionless, then gravely rising, amid the plaudits of the assembled smokers, he took the pet poodle and gently threw him out of the window, sighing, ' If there is anything I *do* hate, it is a poodle !' No mortal pen could describe the feelings of that reformer."

" Now," remarked the Doctor, at the conclusion of a jolly laugh all round, " while my sympathies are decidedly with the principles of the lady in this instance, they certainly do not follow her in her method for their enforcement. She was not obliged to take a seat in the smoking-car, and consequently no one was infringing upon her personal rights. But when she intruded her presence in the coach set apart for smokers, and tried to enforce her views upon them in the impatient way related, she was clearly trespassing upon the rights of others, and with all due sorrow for the sufferings of the little poodle, the innocent victim of its mistress' mistaken zeal, I must say that in my opinion the gentleman served the lady not very far from right. The most remarkable exhibition of unseemly prejudice," added the Doctor, " that has come to my notice lately, was the rejection of an

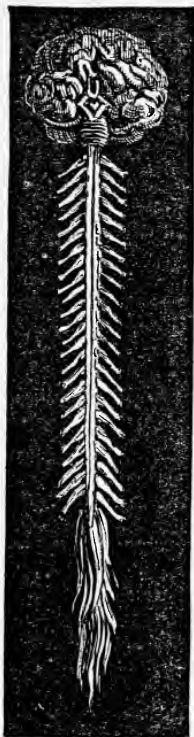
application of a young Hindoo theological student for membership to what is called the *Welcome* Division of the Sons of Temperance in New Jersey, because his skin was a shade darker than that of a sunburnt farmer's boy. To a mind not blinded by such prejudice the fact would suggest the inference that only white people are weak enough to become drunkards." This bit of comment brought a gleam of sunshine from Mr. Johnson's generous features.

I have not time or space for a detailed account of all that passed between the good people who accidentally met at the Doctor's. Suffice it to say, that no one of them seemed to regret, excepting on Sammy's account, that the latter had attended the party. Miss Minnie reported herself as having warmly taken the part of her mother when she endeavored to conciliate the disaffected ones who flew from the refreshment-room at the time Marvellie abruptly left, and she expressed herself as greatly pleased with the manly course taken by her escort, the young lawyer, at the time she was absent from the table.

Old Mr. Johnson had called to ascertain when Sammy could deliver the lecture which young Dig-

gles and some of his friends had expressed a wish to hear ; Mrs. Biddlewicker and Minnie, to apologize to the young lecturer for the rude treatment he had received at their house ; Mrs. Millstone, to tell Doctor Hubbs how badly she felt that she was the means of getting Sammy "into such a scrape," as she termed it ; and Mrs. Hubbs had been attracted to the office-room to hear what the company had to say about the exciting affair.

After the visitors had departed Doctor Hubbs took his phaeton to make professional calls ; Sammy applied himself attentively to his neglected work, and Mrs. Hubbs dropped into an easy-chair to read the daily newspaper. Inasmuch as all are engaged in their individual pursuits, not even excepting the two Sponsies, who are in the kitchen going through their military manœuvres of which they never become tired, I will occupy a little time in telling my young readers something more about the nerves. In preparing Sammy for his last lecture, the Doctor showed his pupil some pictures which I have not spread before you ; and as I want you to keep up with the young lecturer, I must present them here.



We will first look at the trunk of the cerebro-spinal system. This picture gives us a front view, but you will see the cerebellum, or back brain, dipping down on each side below the cerebrum, or front brain. All those branches coming out on either side of the spinal cord, as well as those hanging down at the end, represent nerves which are cut off at a short distance from the points where they leave the main trunk. It would be nearly or quite impossible in a cut of this kind to give the nerve-branches entire. Here we see the nerves which extend throughout the muscles and tissues of the body, and supply the former with the nervous forces which enable us

CEREBRO-SPINAL SYSTEM, by the aid of our muscular

bands and cords to walk, run, jump, and climb fences whenever we choose to do so. When we want to move our limbs, the desire of our psychic faculty, or soul, is made known to the brain, and from this reservoir forces are at once dispatched to those muscles which, under nervous stimulus, can cause such motions. As remarked in a previous chapter, the left side of the brain mainly controls the muscles on the right side of the body, and the right side of the brain chiefly controls the muscles on the left side of the body. These nerve-fibres from the two hemispheres cross over at the medulla oblongata, and then issue at regular intervals from the spine, at various places, to control the muscles which are located on the same side of the spine as that from which the nerves make their exit.

The cerebro-spinal system also supplies the greater part of the nerves of sensation, or, in other words, the majority of those nerves which enable us to feel the sensation of pleasure or pain, or to know by the sense of touch when we come in contact with anything. But the sensitive nerves, unlike those controlling the muscles, cross over from

the right to the left side, and from the left to the right side, throughout the entire length of the spinal cord.

Perhaps you would all like to know what a nerve looks like. Well, it is made up of a lot of filaments, or threads, bound together, and the nerve filament, or thread, is so small that in the brain and spinal cord it is only one ten-thousandth of an inch in diameter. In the nerves of the body, however, outside of the brain and cord, the filaments are about five times larger. A single filament is round, with an outer, colorless, transparent tubular membrane of great delicacy, and an inner grayish, firm, transparent cord, and between this inner cord and the outer tube there is a thick white fluid. Each one of these nerve-filaments acts like an independent telegraphic wire, and is so insulated from the others which are bound together with it that it acts independently of the rest from its beginning to its end. It is indeed this wonderful combination of independent conductors composing each nerve which makes the telegraphic system of the human body so perfect. It is supposed that the inner cord of a filament is the real con-

ductor of nervous forces and impressions, and that the outer tubular membrane, with the fluid between it and the cord, constitutes the insulating substance. Then to think of it! those filaments are so numerous in the Capitol of the Nervous System—the Brain—that they are supposed to number hundreds of millions! Whenever you want to behold the most wonderful telegraphic station on earth, look in the glass! it is located above and behind your face! your eyes are its windows, your nose, with its double orifices, its ventilators; your ears, its doors for its phonetic reporters; and your skull, its roof and inclosing walls. Within the latter various faculties are as busy as so many departmental clerks and telegraphic operators in dispatching the business and messages relating to the strange physical processes which keep you alive; and you have but to touch one of these busy-bodies with the impulse of a wish to move backward or forward, walk, run, jump, or to perform any muscular movements suited to your bony and muscular framework.

Movements performed by your desire are called voluntary motions; nearly all motions of this class

are effected through the Cerebro-Spinal System, while nearly all the involuntary motions, such as the circulation of your blood and lymph and the carrying on of the exchange between the blood and tissues, are effected by the Vegetative Nervous System, as described in a previous volume.



DIAGRAM OF PNEUMO-
GASTRIC NERVE.

Now, again, I want to call your attention to a big pair of nerves which are the medium for both voluntary and involuntary nervous action. We will reproduce a picture from Dalton which represents this pair. It will be seen that it originates at the side of the medulla oblongata, with which it is connected by ten or fifteen separate filaments. The filaments bunch together, forming one nerve, and descend through the floor of the skull to the trunk of the body, where the filaments again

branch out and visit the breathing-organs, the heart, the stomach, the liver, and perhaps other organs. The other one is mainly like the one just described, and need not be separately presented here. The pair descends on each side of the neck, and on entering the body visits so many parts that the old anatomists named it the "par vagum," or the wandering pair.

The voluntary power of this pair of nerves is exhibited when we talk or sing, or hold our breath, or when we perform the first motions of swallowing. In its involuntary action it might well be called the helper of the Vegetative Nervous System. It assists the latter in working the breathing-passages, and it has the main control of the tube through which our food descends until it reaches the pyloric orifice, or gate, between the stomach and the duodenum. It has sensitive nerves in the lining of the stomach, and nerves of motion outside of this organ; the former stimulate the secretion of the gastric juice when the food enters it, and also give notice to the outer ones when all is ready for giving the contents of the stomach a good churning. Then

the outer ones, acting upon the muscular fibres, set the stomach into that commotion which reduces the food to such a condition that it is suitable to pass the pyloric gateway, all of which you have read about already in Volume III.

The pneumogastric nerve also exercises an influence over the heart, liver, very likely the kidneys, and possibly other organs. When we come to look into its function, we are compelled to regard the vegetative nervous system as a sub-contractor, as we call one who works under the direction of some higher contractor; and this higher contractor, who is in turn subordinate to the brain, is the pneumogastric nerve.

The nerves which keep the blood moving through the arteries, capillaries, etc., have been sometimes called the vaso-motor nervous system. But this system is but a part of the vegetative nervous system, and is under its control. The latter keeps all the vital machinery in motion much as the steam of an engine keeps its machinery going. Then the pneumogastric nerve reaches down from the skull into this complicated mechanism much as the arm of the engineer

reaches out to the levers, valves, etc., of an engine, and exercises more or less of a guiding power. In exercising its influence over the lungs, heart, liver, etc., it very likely acts under the direction of those organs of the brain which Professor Buchanan has mapped off in front of the line drawn perpendicularly before the ears in the chart given on page 130. In almost a direct line one above another, in the chart referred to, we find the locations of those organs which we are told exercise a direct influence over certain vital parts. For instance, the organ marked pulmonary has control of the lungs; the one marked cardiac presides over the heart; hepatic, over the liver; gastric, over the stomach; and renal, over the kidneys. Now may it not be that the pneumogastric nerves are the telegraphic wires through which these organs in the brain directly communicate with the organs named in the body? Turn back and look at the chart again; it will repay you to do so.

Mons. Papillon would have us believe that the heart is, as it were, bridled by the pneumogastric nerve so that that organ may be quickened or

slackened under impulses sent from the mind. We know the fact, but he gives us an explanation of the cause. He calls these nerve-bridles the accelerator and retardator nerves. He claims that it is through these nerves that every shade of feeling influences the heart to quicker or slower action.

“Every agreeable or joyous emotion of the soul,” says this writer, “excites the accelerator nerves of the heart, and causes that organ to beat with great rapidity, lessening at the same time the force of its contractions. The phrases *the heart leaps with joy*, or *flutters with joy*, admirably characterize this action of the accelerator nerves. The facility with which the heart drives the blood into the arteries, under such circumstances, produces that feeling of comfort and pleasure which is expressed by the words *a light heart*. On the other hand, all sad or painful feelings act chiefly on the retardator fibres of the pneumogastric nerves. Emotions of this description diminish the rapidity of the heart’s beatings, and so increase the amount of blood discharged from that organ at each beat; hence the contrac-

tions by which it drives the blood into the vessels are laborious and protracted. These contractions, attended as they are with pain, give rise to a class of sensations expressed in common language by such phrases as *oppression of the heart, the heart is agonised, etc.*"

With this explanation you will all understand which nerves control your heart when you feel jolly, and which ones are influencing that organ when you are feeling unhappy. But, I imagine, you are wondering by this time what the young lecturer is about. Well, his heart is just now rather under the influence of the retardator nerves, for the monkeys have been making so much of a racket in enacting sham fights and firing their miniature guns, that Mrs. Hubbs has given Sammy notice to take both of them home with him this evening. Poor Jim (the black cat) has nearly lost an eye by their carelessness. All the hair has been burned off from the left side of his head by a blast of powder which came from one of the guns that accidentally went off in the hands of Sponsie Number 2. That side of the poor cat's face is swollen and the eye completely closed,

so that he looks queerly enough. Bridget was so enraged that she boxed the monkey's ears severely with a hand right out of the flour-barrel, from which she was filling the bread-bowl for the purpose of making biscuits just as the accident took place.



A SCENE IN THE KITCHEN.

Badly as the two animals feel with their retardators in full activity, it would thrill your accelerator nerves and make you laugh in spite of your sympathies to see them. Jim looks wildly with his remaining eye at Sponsie Number 2, and the

latter stares from under his flour-crested eyebrows at Jim with a good deal of that same restless surprise that the young folks viewed each other in the masks at the Biddlewicker party. Sponsie Number 1 is gazing sadly upon both. I have tried to give you a picture of the scene, but the artist cannot portray the emotions which thrilled the nerves of Jim and Sponsie Number 2, nor can he pencil the singular activity which must of necessity be going on in the pneumogastric nerves of all the animals, Sponsie Number 1 included. An attempt to do so would be like trying to photograph a mosquito on the wing and reproduce in the picture his persuasive musical hum. But the sentence, whether just or unjust, has been pronounced, and there will be quite a clearing of Bridget's kitchen when Sammy goes to his school between seven and eight o'clock to-night. With this very brief summing up of the situation, so far as the Sponsies are concerned, I must close this chapter.



CHAPTER X.

BAD NEWS—THE RETARDATOR AND ACCELERATOR NERVES—A TRAGEDY IN SHIN-BONE ALLEY—THE DEATH OF SOME PETS—SAMMY'S SORROW—THE DOCTOR DIVERTS HIS MIND WITH INTERESTING CONVERSATION RESPECTING OUR NERVOUS TELEGRAPH, AND HOW WE LEARN TO USE IT—THE STRANGE RESOLUTION OF SAMMY.



HUSH! hush! Be quiet! my young readers. I have some bad news to communicate! I hardly know just how I should break it to you, for physiology teaches us that the nervous bridle which the brain puts on the heart becomes more or less unmanageable when any great or sudden emotion of the mind occurs. That is, it fails more than ever to be controlled by the

will. It is through this involuntary action of the retardator and accelerator nerves belonging to the pneumogastric pair, that life is endangered sometimes by the sudden communication of either sorrowful or over-joyful news. We should be very careful, therefore, in our intercourse with nervously sensitive people, not to seriously disturb the harmonious action of those nerves which reach down from the brain, and communicate all its emotions of joy, grief, horror, surprise, anger, and fear. It is a common peculiarity of the human mind to like to surprise people with either good or bad news, or to visit them unexpectedly. Look out that this inclination is not gratified at the expense of the health and perhaps life of those with whom you associate.

Now, how shall I tell you the distressing news which you must know some time unless I cut my narrative short by abruptly closing this volume without an additional word? I will see if I can lead you along so as to gradually prepare your mind for the reception of something which would startle you, and greatly disturb the workings of your retardator and accelerator nerves, if communi-

cated in a hasty and inconsiderate manner. And from the course I pursue I desire that you take a lesson of prudence, and if you should ever have some sorrowful tidings to communicate by letter or telegraph, precede the worst feature of it by something which will prepare the one with whom you are communicating for hearing, without undue surprise, a fact painful enough to bear when received in a way that will not shock as well as grieve the sensitive mind. So, too, if you have news and surprises of an excessively happy character, remember the sensitiveness of the retardator and accelerator nerves, and prepare the mind of your friend or correspondent for the good tidings or events, in order that you may avoid setting his heart on an uncontrollable gallop.

By this time you must all be ready for the grievous tale I have to tell ; and I will so relate it as to carry you step by step to the final tragic revelation. When Sammy took the two monkeys to his Twenty-seventh Street home, last evening, they kept up such a banging that old Mrs. Tubbs said she could not stand the racket. The guns were consequently taken from them and hidden

in Esther's room. Before placing them between the two mattresses of her bed, Esther loaded both of them with balls as well as powder, remarking, as she did so, that she should on the following day shoot some rats which came out in the back-yard to sun themselves when old Blücher would lie sleeping in front of his kennel. Now, while Sammy was instructing his evening class, Esther being present with most of the other members of the family, these two mischievous Sponsies made a persevering search for their hidden weapons. With the cunning peculiar to creatures of their species they had little difficulty in finding them, and when the young lecturer was right in the midst of his physiological explanations to a large audience of colored people, the reports of two guns were heard, followed with the most piercing and agonizing howling and whining from old Blücher. The peculiar cry of the dog rather than the firing of the guns startled everybody, and in an instant the parlors were vacant and the back-yard was crowded with people.

There lay poor Blücher, kicking, and raising his head in a most beseeching manner, while

the blood was flowing from a wound in his neck in the region of the carotid artery. But



THE TRAGEDY IN SHIN-BONE ALLEY.

where were the monkeys? Neither of them was visible! Could it be that some wanton boy had shot good old Blücher? Ah, no! A little way

from the faithful dog, in the dim light that struck across the alley from the back-parlor window, lay Sponsie Number 1, motionless. Perhaps too neglectful of the noble dog lying there writhing in agony, all rushed into the house with the limp and unconscious monkey. All were clamorous to know if he were dead, and crowded around the table upon which he was speedily stretched. The wound was not easily found. He was bleeding from his mouth, and gave no external evidence of injury. A lad was despatched for Doctor Hubbs, while Sammy proceeded to see if he could restore poor Sponsie with electro-magnetism, as he had done on a former occasion. He thought perhaps it might be simply the result of a nervous shock. The machine was being vigorously applied by Sammy and young Diggles when Doctor Hubbs entered. He examined closely the monkey's mouth, and with a probe traced the ball which had entered through it and lodged in the medulla oblongata. The fatal lead had touched the vital spot, and Sponsie doubtless fell dead in an instant after receiving the charge. As nothing could be done for him, the Doctor, led by Sammy and

closely followed by the gaping multitude, proceeded to see what could be done for poor Blücher.

“Too late!” exclaimed the Doctor, after examining the wounded animal, that only gasped and feebly moved a leg at brief intervals! The next inquiry was directed as to the whereabouts of Sponzie Number 2. Had he also fallen in what was intended for only a sham battle? Not likely, for there were but two guns from which Sponzie Number 1 had received one ball and old Blücher the other. Sammy’s theory was that the two monkeys entered into their usual diversion near where old Blücher was lying, and that Sponzie Number 1 was killed by the ball from the gun in the hands of Sponzie Number 2, while the dog received the contents of the gun which was discharged by Sponzie Number 1. All concluded that this must have been the way in which the two pet animals came to their untimely death.

Where, then, was the surviving soldier? The alley was searched in vain, and the colored people visited the yards and basements of all the houses in the neighborhood. Up to this hour not a trace

of the frightened simicide has been discovered. Perhaps he fears arrest ! More likely he is afraid to come within a mile of those horrid guns after what has happened !

How does Sammy bear up under his bereavement ? He feels broken-hearted enough, I assure you. His retardator nerves are so acting upon his heart, that that organ labors slowly and painfully to perform its function ; and you may well say that his *heart is agonized*, as this condition was aptly stated by M. Papillon. With all his sorrow, he has an appointment to lecture at Lincoln Hall tonight. The bills announcing it were posted day before yesterday, and the entertainment cannot well be deferred, for this is the only night for a month to come that this hall, which is a popular one among the colored people, can be obtained. Old Mr. Johnson, hearing of Sammy's misfortune, tried early this morning to change the engagement for an evening some time next week ; but for the reason stated this does not seem practicable. Doctor Hubbs is doing his best to keep up the spirits of his pupil by engaging his mind in interesting conversation about the nervous system. Jus'



AN IMAGINARY TRIP TO VENICE.
in

now he is telling him that to be ushered into the world, as well as to be taken out of it, is a rather serious business. Listen :

“Imagine,” says he, “that you were to be blindfolded and taken in a balloon from your native country, and dropped into a gondola in Venice, and then the covering should be removed from your eyes. The queer appearance of the houses, the absence of streets, your inability to speak so that anybody could understand you, your ignorance of the language of the people, and the strange mental inquiries

which would be going on in your brain as to where you were, would utterly confound you.

“What momentary successions of surprises, then,” continued the Doctor, “must fill the mind of a baby when it first opens its eyes and ears upon this strange planet! It finds itself with arms and limbs which it does not know how to use; with vocal chords and tongue which it cannot employ in articulating words; with ears which only convey sounds which it does not comprehend; eyes which see objects with which it is entirely unfamiliar; and finally with a brain which is provided with hundreds of millions of nerve-fibres which it must learn to use! Professor Raymond has presented this matter very strikingly. In the course of a lecture, he said:

“It is only by steady practice that babies learn how to use their senses. Neither you nor I can rightly estimate the amount of knowledge of these things which an infant learns, and which we can never surpass as long as we live. No teacher ever taught the mind as much as a baby learns in its youth. Suppose you were to be put in a telegraph-office with a hundred thousand instruments,

where all the business was done in cipher, with a different cipher for each instrument, and were obliged to learn the whole, and reply to each message over a hundred thousand instruments at the same time. Who would not go crazy? That is what the baby does, when he lies there sucking his thumb, and we think he is doing nothing.' ”

“ The baby,” added the Doctor, “ reaches out from the cradle for its mother, thinking to touch her delighted face when she is sitting at a far-off window, for it has no idea of distance ; it turns its eyes and ears in the wrong direction when its little new name is called, for it has got to learn to trace the sources of the sound-waves, when by any cause they are set in motion. By watching every expression of face, and every movement of its mother, it must pick up a knowledge of the words which it will by and by articulate so bewitchingly awkward, as to make the mother laugh and the grandmother repeat, till a new language, called “ baby-talk,” will prevail in the nursery. It does not know how to use its tiny fingers, and feels proud when it finds it can double them up in the form of a well-clinched fist. For it to stand alone is a feat

which is announced with expressions of joy by the doting mother. Its first tottering walk from one chair to another is celebrated with a gathering of family and friends to witness a repetition of the wonderful performance. And so it proceeds step by step to acquire control of its senses and voluntary movements, and to get used to the world into which it has been ushered, with no previous preparation, but brimful of possibilities. Some people never do get used to it," exclaimed the Doctor with audible mirth, referring, of course, to those who never become apt enough in the employment of their natural powers to rise above or conquer the obstacles which beset them in life. "And then the majority of people never get the nerves of their brains and bodies into such well-ordered action as to avoid running, mentally or physically, into other folks! Instead of revolving in their own orbits, and developing themselves individually in accordance with the peculiar constitution of their own mental and physical machinery, they waste their energies in trying to force others to revolve in precisely the same circuit, in consequence of which the members of the human family go chafing each

other sore through life. The first lesson for a child to learn, after finding out that he must keep his fingers out of the fire, should be to keep his hands out of other people's affairs. Even with this motto prominently before his eyes, there will still occur too many instances in which the orbit of one individual will overlap that of another, bringing the two into more or less inevitable collision. To train all the various powers of the mind and body in a way to act in harmony with other minds and bodies, and yet allow each one to perform his own individual part so as to make the most he can of himself, should be one of the chief studies of the child after he has learned to walk, and to step aside half way in passing his companion on the street!"

While there was an earnestness in all this, flashes of humor would every now and then steal over the Doctor's countenance while he was speaking. Sammy seemed greatly interested, but the Doctor's good-humor reminded him of his own grief, and of his dear old companion, Sponsie No. 1, and old Blücher, lying dead in the laundry of his Twenty-seventh Street home.

The Doctor noticed the shadow which passed

over Sammy's features, and not quite understanding the cause, changed the subject to that of the coming lecture. Said he—"You will hardly feel like speaking to-night in that large, strange hall, when you are feeling so badly, will you?"



THE SCENE IN THE LAUNDRY.

"Yes—yes, sir," repeated Sammy thoughtfully, scarcely looking up; "and I am seriously thinking of taking the bodies of Sponsie and Blücher to the lecture-room, to illustrate what I shall there endeavor to explain."

“It is not possible!” exclaimed Doctor Hubbs with emphasis and surprise.

“Yes,” replied the young lecturer, looking up with an expression of determination lightening up his tearful eyes, and taking possession of the muscles of his lips. “If Professor Powell could will his head to a medical friend in the cause of science, and Professor Agassiz could on his deathbed request his friends to cut open his body to ascertain the cause of his last sickness, I can certainly command the nerve to lay open the skull of Spon-sie and the track of the cerebro-spinal system in Blücher for the purpose of making my lecture plain to my hearers.”

“But having the bodies of your dead pets before you will constantly remind you of your bereavement,” urged the Doctor; “whereas if the remains of these old companions are not present, you will be likely to become so interested in your subject, that your sorrow may for a time be forgotten.”

This was an argument which Sammy did not try to answer, but it did not change his resolution. “I can,” he said, evading reply, “make good use

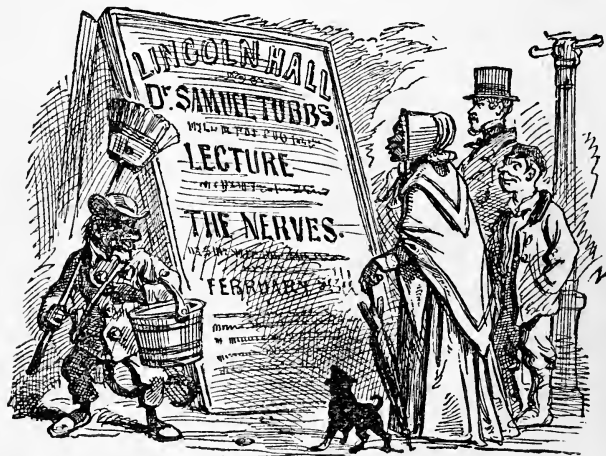
of their brains and nerves before my class, and such others as may be attracted to the hall to-night, and then I can bury their remains just as decently as if they had not served a useful purpose."

"And you think, Sammy, you can do that?" again exclaimed the Doctor, shaking his head and watching the face of the boy, wondering in his own mind if he should ever cease to be surprised at what Sammy seemed ready under all circumstances to undertake.

When the youth looked the Doctor calmly and steadfastly in the eyes and answered firmly, without a quiver of the lip or a nervous motion of the muscles, "Yes, sir, I can," the latter arose from his chair, confident that his pupil could carry out his programme, "for in what instance," asked the left side of his brain of the right hemisphere, "has the boy failed in what he has attempted?"

The Doctor then took to his phaeton, and Sammy went over to his morning duties in the Dispensary. The bulletins of the bill-posters in the middle and upper parts of the city are pretty well plastered over with announcements of Sammy's lecture, and as the hall is capable of holding about

seven hundred people, the young lecturer will have to stand before a larger audience than he has ever addressed before. I will now take leave of you all till to morrow, when I shall endeavor to give you a pretty full report of the incidents of the lecture.



CHAPTER XI.

THE LECTURE—MISS BARKENSTIR PRESENT—
THE VARIOUS SOURCES OF ELECTRICITY—AN
INGENIOUS THEORY ORIGINATED BY SAMMY—
THE FORCES EMPLOYED BY OUR BRAIN—
ANIMAL MAGNETISM—SAMMY'S REPLY TO
YOUNG DIGGLES—THE BURIAL OF SPONSIE
AND BLUCHER—THE CLOSE OF THE VOLUME.



INCOLN HALL was packed with people last evening. The settees were all occupied, and chairs were brought to the aisles. The audience was made up of people of all shades of color, from the lightest blonde to the blackest Ethiopian. The colored element was of course predominant. But who do you suppose came early and secured the front seats? Why,

Mrs. Biddlewicker, Mrs. Millstone, Minnie Biddlewicker, Julia Barkenstir, little Miss Goodlove, accompanied by the young lawyer and the old gentleman, Mr. Goodlove. The latter, by invitation, took a seat on the platform, when the young lecturer, accompanied by Doctor Hubbs, entered. The entrance of Sammy and his preceptor was signaled by such a clapping of hands and stamping of feet as was almost deafening. This applause was initiated by the young people who belonged to the evening class, but all present instantly joined in the complimentary welcome, and none with greater enthusiasm than those occupying the seats in front.

Before ascending the platform, Sammy gracefully passed along the front row, and shook hands with his admirers, who had stood by him at the masked party. Miss Julia Barkenstir held his hand for some moments in close conversation, and although no one could hear much that she said, the sparkle of her magnetic blue eyes gave evidence that she was greatly pleased to meet the one who, while masked, had captivated her young heart. The spell was not yet broken, for while

the paper mask had been removed, she felt that there was still another one created by unreasoning prejudice, behind which was a soul as noble as ever shone through a white cuticle.

Old Mr. Johnson came in very soon after Sammy took his seat. On the platform by this time were Doctor Hubbs, Mr. Johnson, Mr. Goodlove, Young Diggles, and by the side of the latter, Sammy's little sister Esther. With the exception of Esther, all of the Tubbs family were in side-settees facing the platform, where they could conveniently look over the audience, and observe the effects of Sammy's wise sayings. Under the speaker's desk, in a basket which had been brought early by the elder Tubbs, were the brain of Spon-sie Number 1 and the cerebro-spinal system of old Blücher !

Doctor Hubbs felt and plainly exhibited quite as much concern as he did on the occasion of Sammy's first lecture. He greatly feared that his pupil would be embarrassed by the vast concourse of upturned faces, if not overcome by the grief under which he had been suffering all day. These two causes put together he feared would be suffi-

cient to greatly mar the lecture, if they did not utterly break down the speaker.

When the clocks in the neighboring churches had finished striking eight, Doctor Hubbs, only too eager to relieve his suspense, promptly arose and explained the embarrassing circumstances under which Master Sammy would address them, and begged their generous indulgence. The allusion to his dead pets visibly affected the young lecturer, compelling him for a few moments to bury his face in his handkerchief; but when the Doctor in concluding proceeded to introduce him to the audience, he stepped forward with a calmness which surprised everybody.

After a few introductory words, he took from under the desk the brain of Sponsie, and, to please Young Diggles, presented the facts regarding phrenology. From this subject he rapidly passed over physiognomy, sarcognomy, and pathognomy, very much as he had done at the masked party. His front-seat admirers, indeed, began to think that they were only to have the same dish warmed over. But by and by he struck upon a more exhaustive consideration of the brain, cerebro-spinal

system, the vegetative, cranial, and pneumogastric nerves. After describing their origin and



SAMMY EXPLAINING SPONSIE'S BRAIN.

the parts which they controlled or influenced, illustrating his discourse first with Sponsie's brain,

and then with old Blücher's cerebellum and spine, he proceeded with graceful gestures as follows :

“ Here we have a telegraphic system more perfect than the ingenious mind of Professor Morse could have conceived. It is the masterpiece of the GREAT MIND that brought the inventors of our overland and oceanic telegraphs into being ! ‘ Can the servant be greater than his Master,’ or the subject greater than his Maker ?

“ Moreover, science reveals the fact that our minds employ about the same agency in communicating with the various members and organs of the body that is used by the telegraphic operator. What we call electricity in some one or more of its various forms is doubtless the stimulus which our brain employs in performing, under the direction of our will, all our voluntary motions, while other nerves, called the involuntary, are busy in conducting to the heart, lungs, stomach, and other organs, the electrical impulses which keep the whole living machinery in action.

“ By chemical and mechanical processes we can produce various forces, which seem to be in some way related to those which rend the heavens in a

thunder-storm. For instance, we can produce with one kind of an instrument frictional electricity; with another, aided by certain chemicals, an electrical influence called galvanism; by another, still another kind, electro-magnetism; and by simply heating unequally a bar of bismuth we can produce at least a feeble current of what is called thermo-electricity. You can find out about all these different kinds of electricities by referring to your school philosophies and cyclopædias.

“Each one of these forces has some property peculiar to itself. They are not all precisely alike. Between some of them their effects are widely different; now, when a great naturalist like Buffon informs us ‘that the animal combines *all the forces* of Nature; that his individuality is the centre to which everything is referred, a point reflecting the whole universe, *a world in little*,’ what are we left to infer, unless all of the above-named forces, with perhaps some others, are employed in our nervous telegraphic systems in carrying on the wonderful processes of living, moving, feeling, and thinking?”

Sammy had been several times interrupted by

applause, but at this point it was uproarious and continuous. The restless and nervous face which Dr. Hubbs had brought to the hall with him was now lighted up with an expression of relief and



OLD MR. TUBBS DELIVERING
A MESSAGE ON TIPTOE.

delight which was shared by old Mr. Johnson, Mr. Goodlove, and by the ladies and their escort on the front seats.

The father and mother and other relatives of the young lecturer made no effort to conceal their pride, and the old man Tubbs desired so much to impress the audience with the fact that he had some personal connection with the performance, that

he would every now and then step on tiptoe to say a word to either Dr. Hubbs or Mr. Johnson; messages which could have had no great importance, inasmuch as a smile or a nod of the head seemed in every instance quite sufficient for a satisfactory reply.

“It is my belief,” resumed the lecturer at the conclusion of the applause, and while setting down a goblet, from which he had taken a sip of water, “that our ability to judge of the quality of things by the sense of touch is in a great measure due to thermo-electricity. In an article which I recently read in Prof. R. A. Gunn’s Medical Mirror, the writer undertook to show the plausibility of referring the production of all our nervous forces to a sort of thermo-electrical battery made up of external membranes which are kept at a lower temperature than those in the central portions of our bodies. He considered only one assumption necessary, and that was not an improbable one, it being that ‘a thermo-electrical current is capable of being generated between soft tissues of different composition and structure.’ But unfortunately the writer claimed too much. One of his critics answered him in language as follows :

“ ‘The theory is advocated by some, and with considerable plausibility, that nerve-force is generated by thermo-electricity, produced by the difference in temperature of the inside and outside of the body. On the other hand, it is argued by

those adverse to this theory, that the experiments of men exposed for a long time to a temperature equaling the blood-heat appear not to favor such a theory, because, notwithstanding such a temperature is not promotive of health or comfort, the simple fact that man can live in an atmosphere of which the temperature equals that of the interior of the body, is regarded as proof that nerve-force does not depend on this, but rather on the consumption of food, absorption of oxygen by the act of respiration, and the continual repairs of all the tissues, nervous and muscular, by the materials contained in the blood.'

"This critic," resumed the lecturer, "is without doubt correct. A volume in the library of my generous preceptor [applause] entitled 'Medical Common Sense,' published nearly twenty years ago, explained a variety of physical processes which were sufficient to supply the body with the requisite electrical forces for running its complicated telegraphic system; and the experiments of scientists have not only shown them to be true, but have stumbled upon a variety of other ones. Becquerel tells us that 'even the various cells,

tubes, tissues, globules, etc, with the fluids which moisten them, are so arranged in the body that they are constantly evolving electricity.' The American Cyclopædia informs us that the researches of Matteucci, Du Bois-Raymond, Donne, Baxter, Brown-Séguard, Eckard, and others, have established beyond doubt that the production of electricity is constantly going on in all the tissues of the living animal body.

"It is not therefore necessary," said the lecturer, looking up from a scrap of paper upon which he had noted the above quotations, "to go to the sources of thermo-electricity in the human body, to find the forces which work its machinery. But it may not be assuming too much to say that quite likely thermo-electricity greatly aids us in our sense of touch. Everything, scientists tell us, possesses electricity of some kind (even vegetation is found to generate and throw it off), and it is doubtless to this fact, in part, that we are indebted for our ability to tell what many substances are by the sense of feeling when our eyes are closed. But it is also evident that everything has its own peculiar temperature. Delicate shades

of difference may not always be detected by a thermometer. Our instrument-makers have not yet made telescopes that will show to us what kind of people inhabit the planets; nor have they given us microscopes that have the power to reveal the smallest living specks of earth. Neither have they as yet given us a thermometer which can be supposed to possess the power of revealing all the fractional degrees of heat and cold. Now, then, we have sensitive nerves terminating outwardly in our skin, and inwardly, directly or indirectly, in our brain. Our skin is literally filled with these terminating fibres. When we touch an article or thing which is colder than the internal temperature, may it not be in compliance with the law by which thermo-electricity is generated, that a succession of sparks of this kind of electricity, fly to the brain, informing it of the fact? and when we touch something warmer than the internal temperature, is it not possible that the brain becomes conscious of the fact, by the production of a succession of sparks of thermo-electricity, which leave that organ and pass into the medium or thing? And, again, may it not be the radiation

of thermo-electricity from our bodies in hot weather, or in warm baths, which, in part at least, causes our sense of lassitude? Finally, may it not be this peculiar form of electricity which greatly aids us in distinguishing between marble and wood; crockery and glass; cloth and paper; and between any one substance and another by the sense of touch? Each article, doubtless, has its own temperature, which our delicate thermo-electrical battery can detect, whether the thermometer can or not. Bear in mind that when our hands are long in contact with one thing, the difference which our senses first perceive steadily becomes less noticeable, and, further, that an excess of heat or cold, as when we have had our hands in hot water or exposed to wintry air, causes what we call a numbness, which disqualifies us from distinguishing the qualities of things by the sense of feeling. Remember that it is by years of practice, from babyhood up, that we learn to know what many things are by our fingers or hands, without the aid of our eyes; then reflect, that if we are dependent upon thermo-electricity for this power. our nerves of touch cannot prove reliable whang

they are raised to a much warmer or lowered to a much colder temperature than that to which we are accustomed."

During the delivery of this philosophical matter, several attempts were made to get up applause, which failed, because those who understood it were so deeply interested that they did not wish to lose a word, and those who did not comprehend it saw nothing in it to applaud. It was mainly from Sammy's class that the slight outburst occurred, for its members had been under his instruction long enough to feel certain that he was acquitting himself with credit, even if they did not comprehend all that he was saying. But when the young lecturer stopped to take a glass of water, a round of applause was started at the front seat, which rapidly extended to every part of the hall, while the gentlemen on the platform leaned towards each other and exchanged the warmest congratulations.

"It is my belief," said the lecturer, on resuming, "that all forms of electricity exist in the human body, and that some of them combine in producing what we call nervous force, so that the

nervous current may not have the characteristic properties of any one of them. Animal magnetism may be the product of two or more of these different forms."

Here Young Diggles interrupted the speaker by



YOUNG DIGGLES WISHES TO BE INFORMED.

rising and asking with a voice somewhat tremulous with embarrassment :

"Dr. Tubbs, sar, habn't Mister Secord-Brown dealt a death-blow to anibal magnertism?"

"I think not," replied Master Sammy, stepping

gracefully to one side of his desk, so that he could face his questioner without turning his back upon more than half of his audience. "In one of his lectures, Dr. Brown-Séquard asked the question, 'Can the nervous force spring out of the nervous system to produce some action?' To which he replied 'that there were no facts to prove it.' And he added, 'that if he was right, it was a death-blow to animal magnetism.' But it seems to me that he furnished the necessary facts to show that he was not right, in a lecture delivered in less than ten days thereafter. He said that Catlin, who traveled in the West, and wrote two volumes on the Indians, stated that when the calves of the buffalo were caught, and the air from the lungs of a man forcibly breathed into their nostrils, they became so fascinated with the influence, that they would run after the horse of the hunter and follow him for five or six miles. He gave us the same authority for saying that a wild horse that has been lassoed and treated in a similar manner will follow his captor anywhere and act perfectly tame.

"Now, I am sure," said the lecturer, with a bright smile lighting up his face as he turned

squarely to the audience, "no believer in animal magnetism could give two stronger facts than these in support of their favorite doctrine. Furthermore, it is not to be supposed that such men as Cuvier, La Place, Hufeland, Agassiz, Dr. Herbert Mayo, Sir William Hamilton, Dr. Carpenter, and Prof. Edward Hitchcock would have been the supporters of the claims of Mesmer and his followers, had not facts to support them been presented clearly to their minds. In all our intercourse with mankind every day of our lives, we have evidence of the phenomena of animal magnetism. We communicate it with our hands; we exhale it with our breath; we flash it from our eyes; and to an extent which influences those with whom we associate without the aid of an audible word from our lips."

This reply to Young Diggles was greeted with rapturous applause, during which the speaker bowed to his audience and took his seat.

Doctor Hubbs, old Mr. Johnson, and Mr. Goodlove successively followed in a few remarks expressive of the interest they had taken in the lecture, the Doctor remarking that all the young man had said of thermo-electricity and animal magnetism

was as new to him as it was to any one in the audience. This elicited another round of applause, for it was pretty generally suspected that Sammy was doing little more than reciting something which his preceptor had prepared for the occasion. The first doubt on this point was raised in the minds of the wiser ones when the young lecturer replied to Young Diggles. This, they whispered among themselves, could hardly have been arranged beforehand, although some were disposed to think so. All questions of this kind were set at rest by the voluntary statement of Doctor Hubbs himself. It was nearly eleven o'clock before the exercises closed. The hall having been filled uncomfortably, more than seven hundred persons must have been present, and all went away greatly pleased with what they had heard.

Now I trust my young readers have been interested in the very complete report I have given of what occurred at the lecture. No important points have been omitted from the details of the lecture itself, excepting those bearing upon subjects which have been substantially presented in previous pages. Nor have I used terms with which you should not

be familiar, if you have read all that has gone before. If any one of the chapters or volumes of this series contains anything locked up from the youthful understanding, the key to it will be found in the chapter or volume which precedes it. So you have only to follow the narrative, without skipping to the more interesting points, to fully comprehend the scientific as well as the most amusing portions of this story.

And now, my young readers, our fourth volume is so full it will be necessary to close it with this chapter, and I am glad to be able to give to you in the closing pages of a book devoted to the brain and nerves such a grand lecture from Sammy upon the forces which are employed in performing the various wonderful processes and motions of your singularly constituted bodies. It is only natural curiosity which leads us, when we see some curious machinery, to ask how it works.

When, if ever, I shall report to you more lectures by Sammy, or tell you more about the remarkable achievements of this precocious lad, time must determine. I cannot very well continue a story about "SAMMY THE BOY DOCTOR, AND SPONSIE

THE TROUBLESOME MONKEY" when Sponzie Number 1 is not only dead, but dissected, and his companion, Sponzie Number 2, is a deserting soldier. It would be like asking you to an entertainment of strawberries and cream when I have no cream to set before you. If Sponzie Number 2 should ever recover from his fright and return to the scenes which he has stained with the blood of his comrades, I could reopen my series, and have the title it bears correspond with the narrative.

In closing I will simply present a few interesting facts : Miss Barkenstir is more than ever fascinated with Sammy ; Minnie and her friends think him a prodigy ; Mr. Goodlove and his daughter pronounce the treatment he received at the masked party cruel, if not criminal ; old Mr. Johnson enthusiastically declares to all of his friends that Sammy shall not need money for his further advancement, and Doctor Hubbs has told his pupil that he shall be relieved of all household drudgery, if he wishes to give more time to study. Doctor Winkles knew of the lecture by the bills he saw posted about the streets, but was unable to attend in consequence of an unexpected professional call ; Sammy was not

sorry ; the backwoodsman's widow never returned for Sponsie Number 2, and nobody knows how the little fellow escaped from her on the former visit. The remains of Sponsie Number 1 and of old Blücher have been carefully deposited by Sammy and Esther beneath the very spot where the kennel stood so long, and old Mr. Johnson, in his enthusiastic admiration of the young master of these unfortunate pets, has caused a neat marble slab with their names engraved thereon to be put in the place of the flagging-stone which had for years lain there.



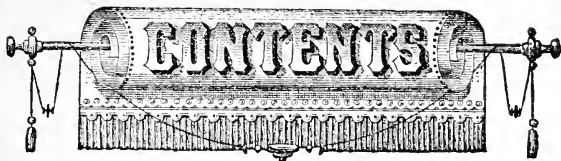
PUBLISHERS' ANNOUNCEMENT.

THE story of Sammy and Sponsie seemingly ends with this volume. VOL. I. gives a history of Sammy's beginnings, of Sponsie's arrival in this country, and of his career as a mischief-maker. VOL. II. is humorous with April-fool jokes, Monkey tricks, etc. VOL. III. shows how a mischievous animal can turn a well-regulated household upside down with sly and cunning tricks. VOL. IV., herewith presented, is full of amusing and thrilling incidents.

This series of four volumes gives a good general knowledge of the human body in all excepting that which relates to the organs of elimination and reproduction. A supplementary volume upon these organs and their functions is now in the hands of the artist and printer, and will be issued on or before the first of January, 1875. In this, the story will be reopened for the presentation of these subjects, and this volume will be made uniform in size and style, so as to make the series one of five instead of four volumes, for those who choose to have it complete in all that relates to the human organism.

In the supplementary volume reproduction is traced through both the vegetable and animal kingdoms, and from the lower orders of animal life up to the higher, in such a manner as to awaken the moral and intellectual faculties of the mind rather than to arouse morbid emotions. Ignorance of the reproductive and eliminating organs is one of the most common causes of the many ills which afflict the human family, and as the causes often begin in childhood it would seem only prudent that the parent or guardian should place in the hands of children and youth such high-toned works upon these subjects as will put them on their guard against injurious habits or practices. The author of this series has endeavored to make the supplementary volume just such a one as will supply what is wanted for this purpose. It may be obtained of the agent through whom the set of four volumes is obtained, or by addressing the publishers direct.

MURRAY HILL PUBLISHING COMPANY,
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