

April 1923

Strength

The Magazine of Good Health

LILLIAN LEITZEL
Gymnast

15c

Lillian Leitzel
the World's Greatest
Gymnast

by Dr. H. Pauline

Reducing
Exercises

Rupture
Its cause and
cure



Another Milo Pupil Acclaimed as a Perfect Man

The highest praise you can give a well-built man is to say that he is like an Ancient Greek Statue. The beauty of the Ancient Greeks was not so much a matter of bulging muscles as of outline and correct bodily proportions.

"Built Like a Greek God"

Here is a young man, Sigmund Klein of Cleveland, whose body is as well proportioned, as strongly made and as beautifully muscled as that of any athlete who has been immortalized in picture or statue.

Klein Is a Milo-Made-Man

He acquired his "perfect-man" physique by practising with adjustable bar bells. While an accomplished lifter his principal object in training was to acquire a perfect body.

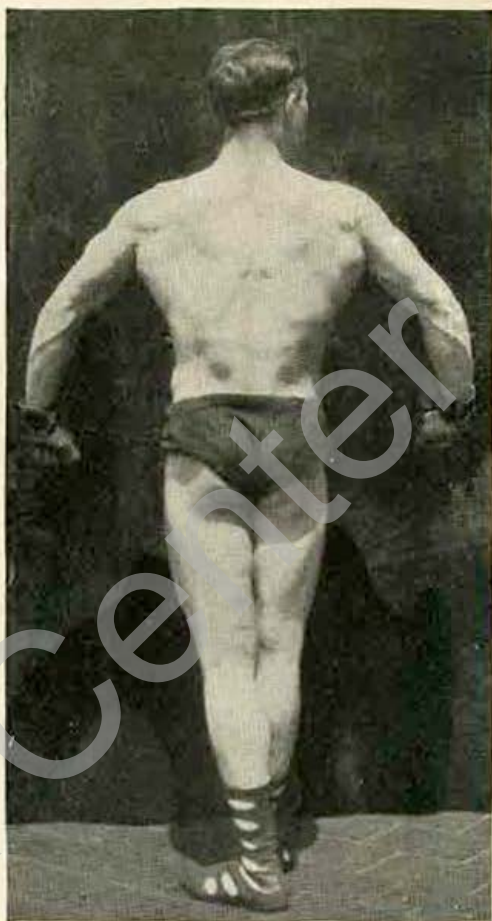
Though but 5' 5" tall, Klein can show a 43" normal chest (something tremendous for a man of his height). His arms are exactly correct in proportion, i.e., his flexed biceps (15") are precisely 20% larger than his straight forearm (12 1/4"). Like all thoroughly well-built men, his general strength is greater than the special strength of any given group of muscles. He excels in feats and exercises that require strength from Head to Heel.

How Would You Like to Have a Body Like This?

We have thousands of pupils in every stage of development, from the new beginners who are building up weak spots by handling lightly loaded bar bells, to the finished products, like Klein, who can toy with hundred-weights.

Every case we handle has its own peculiar and individual features and problems. That is what keeps us fresh, and incidentally, has given us the experience and knowledge to turn out for 20 years such a constant stream of well-proportioned men and great lifters. And yet in training a man our first aim is to give him health, vitality, and physical proportions. The amazing physical strength is not the main object, but purely a by-product of our training methods.

If you are interested in body building and desire results that will justify the time you spend in exercising, you should investigate our methods.



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Sent FREE on request

A large, beautifully printed booklet, containing over 40 pages, explains our plan and shows you just what you can expect in the way of health, strength and beauty of body. It is lavishly illustrated with large sized photographs of many Milo pupils taken especially for us. If you'd like to read it, just send a letter or postal asking for a copy of "HEALTH, STRENGTH AND DEVELOPMENT—How to Obtain Them." It is FREE. Sending for it places you under no obligation whatever.

The Milo Bar Bell Co.

Dept. 37, 301 Diamond St.

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You, too, can learn boxing and self-defense right in your own home by mail. We will send our complete Short-cut Course on approval and *prove* this.

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- BOOK I CONTAINS 32 Illustrations.** How to hit straight blows, winging blows and cork-screw blows, guard, duck, feint, clinch and foot work. Mass Boxing, illustrated for use in teaching large masses of men.
- BOOK II CONTAINS 35 Illustrations,** posed for by two experts. Contains every good blow used in the ring. The description of each blow is followed by the guard for that blow. Also fine points on feinting, ducking, clinching, breaking ground, judging distance and timing.
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STRENGTH

Vol. 7

APRIL, 1923

No. 8

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Science Discovers the Secret of Caruso's Marvelous Voice

Why is it that the humble peasant boy of Italy became the greatest singer of all time? This diagram of his throat will show you. Caruso's marvelous voice was due to a superb development of his Hyo-Glossus muscle. Your Hyo-Glossus muscle can be developed too! A good voice can be made better—a weak voice become strong—a lost voice restored—stammering and stuttering cured. Science will help you.

**We Guarantee—
Your Voice
Can Be
Improved 100%**

EVERY normal human being has a Hyo-Glossus muscle in his or her throat. A few very fortunate persons—like the late Caruso—are born with the ability to sing well. But even they must develop their natural gifts. Caruso had to work many years developing that muscle before his voice was perfect. Whether your voice is strong or weak, pleasant or unpleasant, melodious or harsh, depends upon the development of your Hyo-Glossus muscle. You can have a beautiful singing or speaking voice if that muscle is developed by correct training.

Prof. Feuchtinger's Great Discovery

Professor Feuchtinger, A. M.—descendant of a long line of musicians—famous in the music centers of Europe for his success in training famous Opera Singers—discovered the secret of the Hyo-Glossus muscle. Dissatisfied with the methods used by the maestros of the Continent who went on year after year blindly following obsolete methods, Eugene Feuchtinger devoted years of his life to scientific research. His reward was the discovery of the Hyo-Glossus, the "Singing Muscle" and a system of voice training that will develop this muscle by simple, silent exercises.

Grand Opera Stars Among His Students

Since the Professor brought his discovery to America hundreds of famous singers have studied with him. Orators, choir singers, club women, preachers, salesmen and teachers—over 10,000 happy pupils have received the benefits of his wonderful training.

There is nothing complicated about the Professor's methods. They are ideally adapted for correspondence instruction. Give him a few minutes each day. The exercises are silent. You can practice them in the privacy of your own home. The results are sure.

The Perfect Voice Institute guarantees that Prof. Feuchtinger's method will improve your voice 100%. You are to be your own judge—take this training—if your voice is not improved 100% in your own opinion, we will refund your money.



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If you want to sing—if you have always felt that you could sing but lack the proper training because you had not the time nor the means to study—here is your chance. You can now learn to sing at a very small cost and in the privacy of your own home.

If you want to improve your speaking voice—if you stammer or stutter—Professor Feuchtinger will help you.

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Singing Speaking Stammering Weak Voice

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Only Two Dollars (\$2.00) for this Complete Boxing Course!

"SCIENTIFIC BOXING AND SELF-DEFENSE," by Tommy Burns, is a complete boxing course and everyone that is interested in boxing should be sure to obtain a copy of it.

The table of contents will give you a very good idea of how complete the book really is, and you must remember that this book was written by a former world's heavyweight champion. He tells among other things of his favorite guard, a method of warding off a blow little known and rarely practised, yet so effective, that it not only breaks the force of your rival's blow, but also throws him off his balance and makes him open for a counter.

To learn this counter alone is worth many times the price of the book and yet it is but one of a great variety of intimate details revealed to you by "Tommy" Burns. He devotes a great deal of attention to clinching, both inform-

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5. Training on Scientific Lines, with Advice as to Diet.
6. On How to Train to Scale, Together with Advice as to How to Recognize and Combat Overtraining or Staleness.
7. Ring Strategy and Tactics.
8. The Complete Second.
9. On Fouls.
10. The Boxer's Disease, Which Is Too Often the Cause of His Downfall.
11. Some Facts and Explanations.

ing you the steps that you should take against a man who persistently clinches himself and also explaining how you may use to advantage this method which is occasionally the only method by which a boxer can escape punishment.

Do You Know

that as a rule it is wisest to reserve all your offensive movements for fighting at close quarters? If you come to close quarters in the crouch you are up to your man with your shoulders rounded and your arms well placed both to cover up securely and also to give him all the digs for which the opportunity presents itself.

In his preface "Tommy" Burns states: "I have called this book 'Scientific Boxing and Self-Defense,' and I want the first word to sink into your minds. Just get rid of the idea that boxing is brutal; it isn't. It's a game in which brains count more than anything."

"Scientific Boxing and Self-Defense"

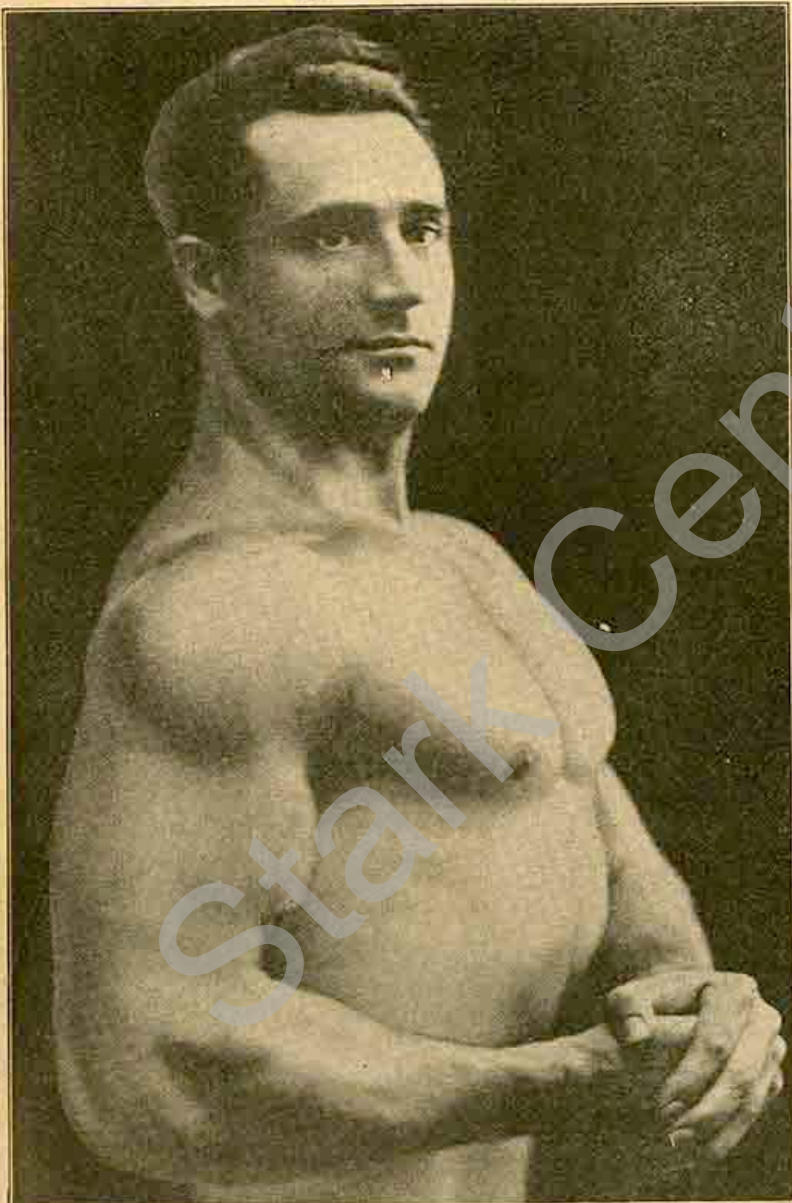
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Give a thought to your own body! Is it all that you wish? Wouldn't you like to put on 10 lbs. of solid muscle and develop a physique that everyone must admire? Wouldn't you like to astonish your friends with your great strength? Wouldn't you like to radiate that energy, pep and vitality that will make you a leader of men—admired, respected, looked-up-to?

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Making real "he men" is my business! I don't care who you are, what you are or where you are, I will give you all that makes life worth living. In 3 short months I make you over—give you a physique that you never even dreamed of, strength that will surprise you, health that is so perfect you'll never be sick.

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What too many brides learn too late

EVERY woman looks forward to the time when she shall become a happy bride—the greatest adventure of her life. And when her dreams come true she is radiant with life and love, glowing with health and energy, vibrant with hope for the future.

In a few years however, great changes take place; gone are the illusions; the rocks of stern reality take the place of castles in the air. Tired lines are etched in her face; perhaps her health is impaired; she "doesn't have time" for this or that—the things she planned to do "after she was married." She is burdened with responsibilities which never should have been placed upon her frail shoulders. Physically and mentally she is growing old. Why? Because more children have come that were fair—to her—to her husband—and, most important, to the children themselves.

Marriage—the holy thing

Why do women allow marriage—the holy thing—to work this wicked transformation?

PARTIAL LIST of CONTENTS:

- *Woman's Error and Her Debt.
- Two Classes of Women. Cries of Despair.
- *When Should a Woman Avoid Having Children? Birth Control—A Parent's Problem or Woman's?
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- *Contraceptives or Abortion?
- Women and the New Morality. Legislating Women's Morals.
- Why Not Birth Control Clinics in America? Progress We Have Made.
- *Any one of these chapters a *lone* is worth many times the price of the book.

Is the Husband or Wife to Blame?

Is the husband or wife to blame for the tragedy of too many children?

Margaret Sanger, the great birth control advocate, comes with a message vital to every married man and woman.

the forces that, in too many cases, have ruined her beauty through the ages—that still drag her down today—that wreck her mental and physical strength—that disqualify her for society, for self-improvement—that finally shut her out from the thing she cherishes most: her husband's love.

In blazing this revolutionary trail to the new freedom of women, this daring and heroic author points out that women who cannot afford to have more than one or two children, should not to herself, a crime to her children, a crime to society.

And now for the first time Mrs. Sanger brings to the women of the world the greatest message it has been their good fortune to receive.

"Woman and the New Race" is a book that will be read wherever womankind struggles with the ever-present danger of too many children. It is a startling, mighty revelation of a new truth, a work that will open the eyes of tired, worn womankind. It can with truth and honesty be called woman's salvation.

A Priceless Possession

Every woman in the country should have a copy of this remarkable and courageous work. For this reason we have arranged a special edition of "Woman and the New Race," which is being sent on approval. Send the coupon for your copy of this wonderful book at once, and if after reading it you do not treasure it as a priceless possession, return it to us and we will refund your money. This book is bound in handsome, durable gray cloth, has artistic black lettering, and is printed from large type on good paper. It contains 224 pages of invaluable information. To have it come to you, merely fill in and mail the coupon below. It is sent to you in a plain wrapper. At the special price of \$2 there will be an unprecedented demand for this edition, which will soon be exhausted, so you are urged to mail the coupon now—at once. Do not send money now—just the coupon.

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Address

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Canadian and foreign orders must be accompanied by money order.

For every married couple

In "Woman and the New Race," Mrs. Sanger shows how women can and will rise above

Why good dancers are popular

How I found a delightfully easy way to learn in just a few evenings at home—and how it has helped me in business and in social life.

By J. . . . R. . . .



Arthur Murray
Dancing Instructor
to the Vanderbilts

I NEVER had a college education, because I had to go to work when I was little more than a boy. And from the first I strove to develop only those qualities which seemed to me to be essential to my business success. Like many another man, I neglected almost entirely the cultivation of the social graces.

Whenever my lodge held social affairs I either did not attend or else sat over in a corner with a few cronies and watched other people enjoy themselves.

A Judge's Sage Advice

At one of these affairs, someone asked old Judge Rhodes his opinion on dancing.

Brief and positive was his answer. And the words of this popular, successful jurist made a vivid impression on my mind:

"I advise every young man to learn dancing," he said. "Dancing gives poise to the body, grace to movement, takes a young man out of himself, helps him to overcome timidity and awkwardness when meeting strangers. If he is a fine dancer the women folk look with favor on him. He is invited everywhere. Women like to make their social affairs successful and without dancing they feel that no affair is ever a real success. Then the good dancer has opportunities to meet just the kind of men and women he is most desirous of meeting. And we all know what a tremendous opening wedge it is to have a strong social acquaintance with business acquaintances."

Rather a new way of looking at the advantages of a fine dancing ability? That's exactly what I thought. I resolved immediately to learn to dance. But how and where? I didn't want to be taught in public classes and I didn't want to spend the time in private instruction. I told my wife what the Judge had said and asked her when and where we could start to learn.

"What a coincidence!" she exclaimed. "Only today Rita Gordon, who you know has blossomed out as a most wonderful dancer, was raving to me about a system of dancing taught by Arthur Murray, America's foremost authority on dancing. He has taught such people as the Vanderbilts, Ex-Governor Locke Craig, as well as scores of other socially prominent people."

How I Easily Learned ALL of the New Dances

Then my wife told me that more than 90,000 people have learned to dance through the learn-at-home system. She told me that with Arthur Murray's method one does not need another to explain his simple instructions on how to master the steps in all of the popular new dances—nor is music actually required. If one follows the diagrams, photographs, and full instructions which he furnishes there is no reason in the world why one should not quickly and easily become a perfect dancer.

The cost of Arthur Murray's method is so small that I sent for it. Both my wife and myself quickly mastered the Fox Trot, One Step, College Rock, Conversation Walk, Waltz, and other of the newer dances. At first we practiced individually—without music or partner. Then we put a record on the phonograph and tried dancing together. We were amazed to find that we kept in perfect step and rhythm from the very



Since my wife and I have learned to dance through Arthur Murray's learn-at-home methods, everybody wants us to attend their social affairs and we always have a perfectly wonderful time. No longer do we envy others.

first. Shortly after we attended an affair and were simply overwhelmed with congratulations on our dancing.

I might add that since our ability as good dancers has become generally known, we are invited everywhere. And the friendships we have formed, through our dancing ability, have been an immense help to me in a business way.

Proof that You Can Learn to Dance at Home in an Evening

Through his new and improved method of teaching dancing by mail Mr. Murray is now able to give you the same high class instruction right in your own home that you would receive if you took private instruction in his studio and paid his regular fee of \$10.00 per lesson.

For a limited time, Mr. Murray is making a very special offer to all who answer this advertisement. He will send you a 16-lesson course for five days' trial.

Satisfaction Guaranteed

Just fill in and mail the coupon or a letter will do—enclosing \$1.00 in full payment and the sixteen lessons will be promptly mailed to you for five days' examination. Then keep the method for five days. Practice the steps and learn everything these sixteen lessons teach you and prove to your own satisfaction that you have found the quickest, easiest, most delightful way to learn to dance. If, within 5 days you desire to do so, you may return the course and your dollar will be promptly refunded to you.

You positively cannot fail to become a good dancer if you follow the few easy instructions of Mr. Murray. Mail the coupon now—you may never see this liberal offer again.

ARTHUR MURRAY

Studio 698 801 Madison Ave. New York City

Arthur Murray, Studio 698

801 Madison Ave., New York

To prove that you can teach me to dance in one evening at home, you may send the sixteen-lesson course in plain cover. I enclose \$1.00 in full payment, but it is understood that this is not to be considered a purchase unless the course in every way comes up to my expectations. If within five days I decide to return the course I may do so and you will refund my money promptly and without question.

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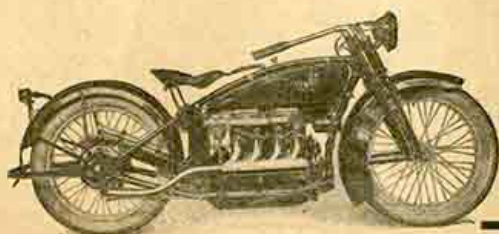
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enjoy the mountains, the lakes, the deep woods—gain vigor and health from the great outdoors the year 'round. With a 4-cylinder Ace motorcycle you can reach those distant spots so quickly and inexpensively that you can have many visits with Nature that you could never find time for before.

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ACE

How My Wife Learned to Play the Piano in 90 Days

A husband's story of the fulfillment of a life-long wish—by a new, easy, spare-time method which has brought the joy of music into thousands of silent homes

FROM boyhood, I vowed that if ever I had a home of my own there would be music in it. No wife for me unless she could play some instrument, and play it well.

But one day Beth came along, knowing not one note from another, and Beth is Mrs. Taylor today. A piano graced our new home, but somehow the old vow was forgotten, and stayed forgotten until Jimmy, Jr., and Beth No. 2 were quite some youngsters.

Then along about the time the novelty of parenthood began to wear off a bit, the yearning for music came back. And one evening I spoke out, "Beth, I'd give a hundred dollars if you could play something—piano, violin, banjo, ukulele—*anything*." Beth looked so hurt I was ashamed of myself, so I said no more.

About three months later I got home early one night, and heard the old piano come to life—first a little jazzy piece, then a sweet plantation melody. And there at the piano was Beth, playing and the two kiddies beating time! She saw me, and stopped. "Oh," she cried, "I'm so sorry!" "Believe me, I'm not," I shouted, and I grabbed the whole family up in my arms.

"But, Jim, I wanted to wait and surprise you when I could really play. I'm learning fast, but it's only three months since I found out"—"Found out what?" I said. Beth began to cry. "I know!" Jimmy, Jr., piped up, "Mother found out the way to learn music just like I am learning to read in school—only lots easier."

Well, that musical party lasted all the evening. It was a howling success.

Jimmy, Jr., had told the truth: the method Beth had found was so easy that anyone at all, from eight years up, could learn it. By this method the U. S. School of Music, the largest in the world, has already trained over 300,000 people, teaching the playing of any musical instrument almost in the same way a school child learns to read.

When first learning to read you look at every letter separately, and spell out every word, e-a-t, m-a-n. Later you do not see the letters; you see the words as units, "cat," "man." By and by longer words become units to you, and you find that whole expressions, like "up the steps," "on the train," no longer are seen as separate words, but immediately, at an instant, without spelling, without thinking words, you see each expression in the unit form.

The alphabet of music follows the alphabet of language. Each note is a letter, and playing is practically spelling the notes together correctly. The first note on the staff above is F. Whether you sing or play, it is always F. The four notes shown above are F-A-C-E, easy to remember because they spell "face." Certain strings on mandolin, certain keys on piano, certain parts of all instruments, are those same notes. Once you learn them, playing melodies is a matter of *acting* what you see! You play almost before you realize it—and every step is real fun, fascinating, simple, interesting, almost too good to be true.

Remember, neither my wife nor most of the 300,000 other musicians trained by this method knew anything about music. Beth mastered the piano; she could just as easily have mastered anything else. Jimmy, Jr., is now taking up



violin, and my daughter is learning singing. Right at home, no costly teacher, no classes at inconvenient hours, no useless study and practice. No numbers, no tricks, no makeshifts. But a sound, quick musical education, learning by notes. Anyone can learn any instrument or sing this way.

When I told Beth I was writing this out to put in a magazine, she told me to be sure and say that the school will gladly send a free book explaining everything, called "Music Lessons in Your Own Home," and that right now there is a special short-time Reduced Price Offer being made to music lovers. The book is free, asking for it obligates you not at all—but you should send for it right away before all copies are gone.

JAMES W. TAYLOR.

Mr. Taylor is enthusiastic. He has a right to be. Yet when you read the facts in our free book you will appreciate that his opinion is *conservative*. You, too, can easily learn your favorite instrument or to sing.

Mail the coupon below to the U. S. School of Music, 994 Brunswick Building, New York City. Or send a postcard. But act at once. Do not delay.

Please write name and address plainly so that there will be no difficulty in booklet reaching you.

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Please send your free book, "Music Lessons in Your Own Home," and particulars of your special offer. I am interested in the following course:

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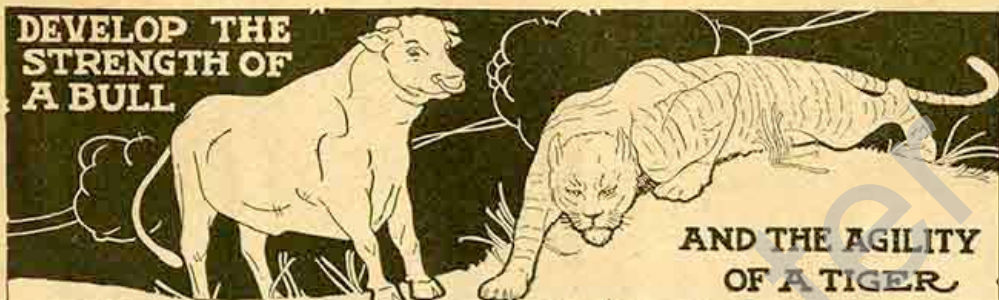
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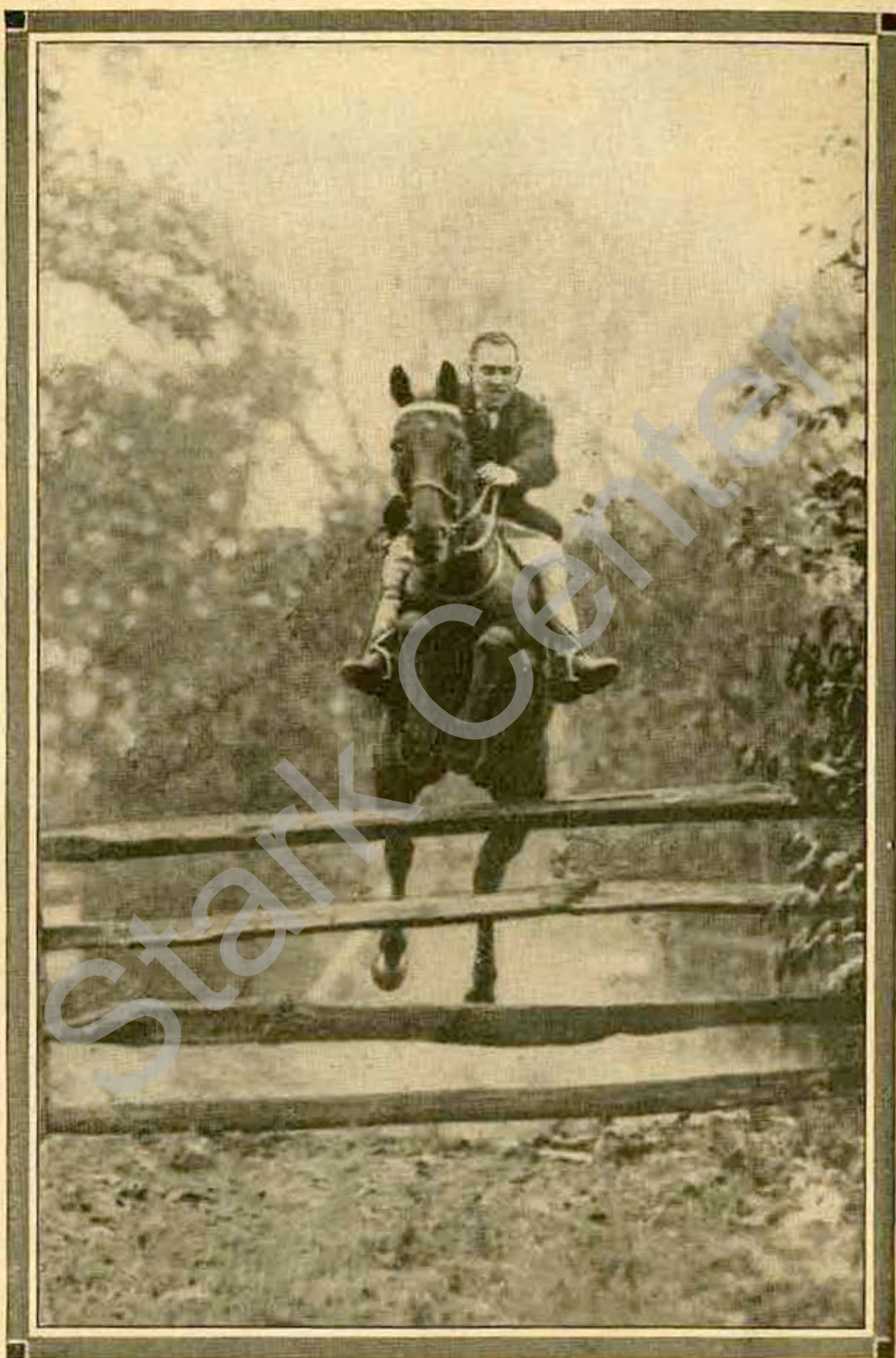
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Horseback Riding—One of the finest and most enjoyable sports as well as the best exercise obtainable.

Why Horseback Riding Is Exercise

By T. von Ziekursch

Has it ever dawned on you that the horse is not the only one to benefit when you go horse-back riding? However, that seems to be the general idea with everyone—read on and see for yourself what it really will do for you.

Your shoulders become straighter and broader, your abdominal muscles are strengthened and built up; your thigh and leg muscles will be greatly benefited.

In other words you strengthen and build up your entire body thru horseback riding.

IF JACK Dempsey rode forty miles on horseback at one crack he would probably drop off to be swept up with the peanut shells.

If we were picking a man to do a stunt like that and were not allowed to select some wrinkled old buzzard off the cattle ranges we would probably point to Joie Ray, the runner.

As we, personally, are not on speaking terms with the names of the various muscles that go to make up the body, we aim to make this article one on what horseback riding does to you and why, and also relate some anecdotes that will probably tell you what we are driving at.

You amble through the park some sunny Spring morning, and see a horseback rider bumping along on the bridle path all dolled out in the latest toggery provided by his social chaperone. Perhaps he is a corpulent individual and you feel sorry for the horse and get a laugh out of it. But look him over and the chances are about ten to one-half of one percent that you will find he has a fairly ruddy glow of the old health sticking out of his face. Probably you ask yourself why, if horseback riding is such good exercise, has it not reduced him to a slim and sylph-like Valentino?

The answer is that an hour in the gymnasium two days a week never made

a fat old broker look like an Adonis in form.

You are perfectly willing to let it go at that, and then along comes a woman riding a bob-tailed percheron. Your instinct tells you she is past the fifty mark and ought to be fat and all the rest of the things that you associate with the dowager of that age who has means enough to go horseback riding. But she isn't and perhaps you wonder. Maybe it even occurs to you that a woman will do anything to retain the slim lines of youth—even to riding a couple of hours each morning.

Has it dawned on you yet that the horse is not the only one to benefit when you go out horseback riding? If not proceed. If so proceed anyhow. For a few paragraphs we are going to take up in very brief fashion just what, why and wherefore, horseback riding does to the rider.

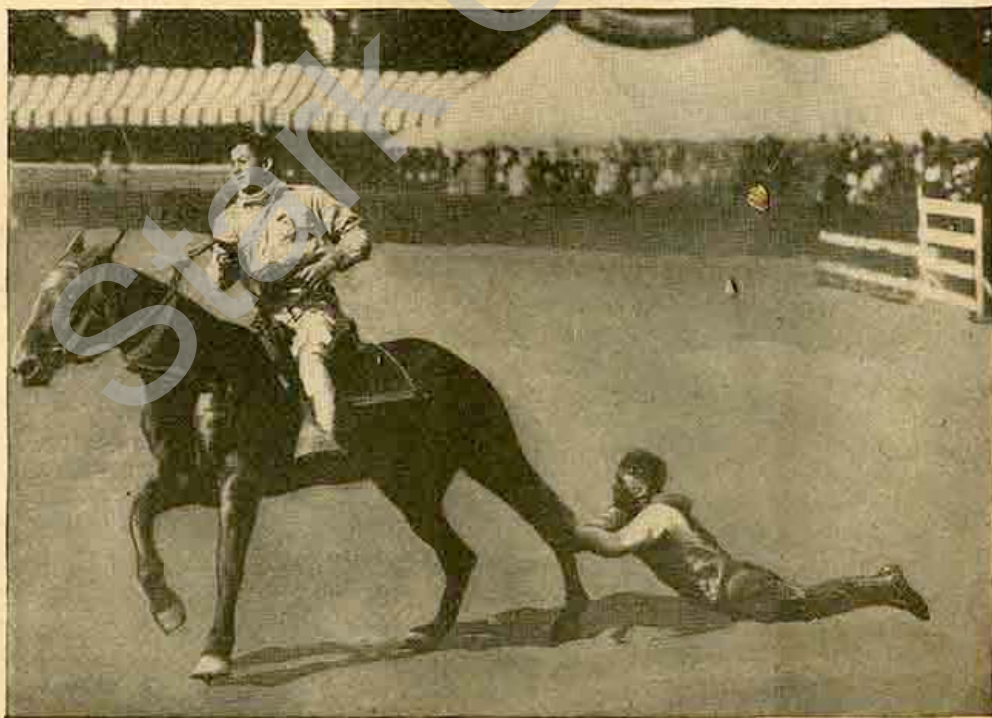
First off: it positively will not make a Sandow out of a runt. Get that idea firmly fixed. But it will just about double the strength and bodily efficiency of said runt. It will do more than that. It will sharpen the mentality.

Let's begin with some consideration of the actual riding. You start out to learn how to ride. You are afraid that the horse will break into a gallop. Right there is the easiest gait of a horse so

far as the rider is concerned. It is the slow jog trot that is the hardest on the person in the saddle. It means just one bump and jolt after another. The first time your mount breaks into a gallop your nerve sinks and keeps on going right down until it drops out of the end of your boots. You lock your knees and thighs about the ribs of the horse and probably hang on for dear life. Right there you are doing the thing that is the first step in strengthening your body through horseback riding. You are bringing the muscles of your hips, back and legs into play, all of them, in that effort to hang on. By and by as you become more accustomed to it the muscles will respond without the effort necessary at first, they will do it naturally, they will be exercising, your feet will learn what it means to grip the stirrups, your ankles will be a part of that; your calves will do two things, help your feet hold the stirrups and also come into play in pressing your legs

against the side of your mount. Your muscular reaction becomes a marvelous thing. Backward and forward you sway to the action of the horse. The small of your back takes it up. Those little muscles there that help to such an extent in keeping your shoulders straight and strong are gradually built up and you assume a more erect stature. The abdominal tissue is also built up and strengthened enormously just as it is in the oarsman. Each time your mount hits you are thrown forward and the back muscles pull you erect; each time the horse leaps forward you sway backward and the abdominal muscles again pull you erect.

You are sore and exhausted at first. Your hips ache and your thighs are "all in." There has been too much nerve tension. Your knees have been gripping tightly, literally hanging on for life itself. Although you are probably not aware of it you are training the same muscles that Joe Stecher trained to such



Try this and see how long you can hold on.

a high degree in the development of his famous leg scissors holds. The abductors on the inside of the thighs are being built up and shortly you do not feel the strain of gripping your mount. You wonder, perhaps, how it is that you can walk so much more than you could before without feeling the same tiredness. The answer is that your leg muscles have been strengthened to an extraordinary degree.

You are certainly breathing deeper, using that space of the lungs which the singer develops and which is controlled by the diaphragm, the space that is so seldom utilized by the average individual. You cannot help it. Your body is like a pendulum, swaying constantly, every muscle responding to the effort to keep it in an upright position as a matter of instinct and involuntary reaction.

While we are at it let us go into the whole matter just a little deeper without being technical about it at all.

First we can finish off the muscular end briefly by mentioning that your hands, your wrists, forearms and even biceps come into play almost continually and even in women riders there is a building up of strength here. In addition there is a deft sureness that comes to anyone who handles animals much. Your instincts, your brains are superior to those of the animal. You

do not stop to question it. The writer personally believes that there is no better way to learn how to command and understand human beings than by first developing that sureness that comes from handling animals. You would not brook insubordination in a horse or a

dog. It is not necessary to bring brutality or punishment into play to conquer and enforce your will. They learn and understand readily enough when the human being has the strength of character and body to dominate and force obedience.

We have seen a wild, intensely spirited horse respond within a few minutes to a man who knew and was sure of himself. Sharpness of decision, alertness of mind and body cannot help following.

There are a few words to be said of the organic effects before we roam on to other fields. The liver and stomach that refuse to act as any well behaved

liver and stomach ought to, haven't got a chance in the world to keep on being torpid and mean, when they are jolted around by a couple of hours of a trot. Give them that treatment every day for a couple of weeks and the odds are about eighty-seven to one they will turn over a new leaf.

If you still have any lingering ideas that the horse gets all the exercise out



of horseback riding keep right on reading.

Without doubt the worst physical ordeal we ever underwent personally was one fourteen-mile ride at night. Doesn't sound bad, does it? But it so happened that the most of those fourteen miles were almost straight up and down in rugged mountain country. On one occasion we walked fifty-seven miles on one continuous hike in July with the thermometer around a hundred degrees and did it in seventeen hours, and it was easier than that fourteen-mile ride across that spur of mountains. The horse was a wreck for two days.

The man or woman who rides and rides continually is an athlete. There is no help for it.

Now that we have settled all the technical whys and wherefores to the satisfaction of everybody, except possibly those individuals who take a watch

apart to see what makes it run, we can dig into the picture a little further. Did you ever feel the handgrip of some diminutive jockey or a cavalryman or cow puncher or a polo player? They may not be large of stature but you know there is enormous strength of muscles and sinews there.

Some years ago our Uncle Samuel was chasing a restive individual named Pancho Villa, and a crack cavalry outfit was put in the field. That cavalry crowd travelled 160 miles, as we remember it, in a ride that was almost continuous, bucking terrific heat during the daytime in the Mexican Sierras and the intense cold that comes after sundown in these mountains. At that time it was given headlines in the papers as a picturesque feat. It was all of that and a few more. Nobody but trained and veteran cavalry or a gang of cow punchers or some such breed could have lived through it.





See if this won't steady your jaded nerves after a few weeks trial

Ordinarily tales of such feats bring wonderment as to how the horses stood it with little thought of the riders. And the riders have the roughest end of it two out of three times.

There has always been a dispute as to where the finest horsemen were produced. One time you hear the Cossacks mentioned, another time it is the Arabs or the Berbers and occasionally somebody thinks enough of our American riders of the cattle ranges or the Mexican vaqueros to put up an argument. And they are not far wrong, for nine out of ten of those who serve his majesty, the American longhorn, could pass muster with old man centaur himself. Almost all of them are capable wranglers and the wrangler is the last word in horsemanship. It is on him that the pleasant and gentle duty of "breaking" the nine-tenths wild range horses falls, and he breaks them by the simple process of mounting and riding

them into submission, not with bob-sleds in heavy snow as is usually done in the East.

This is a tale of the value of horseback riding but there ought to be room for a little story about the prowess of an American wrangler who managed to get himself on the muster rolls of a Canadian contingent going overseas during the early part of the World War.

His outfit was encamped in England to be drilled until they were nauseated, for most of them had come from the stock ranches of western Canada, and the British officers were going "to harden them into shape for campaigning." When they landed the army medical men acclaimed them the finest physical conditioned men in the entire army and after two months of the "hardening" process they had lost about thirty percent of their efficiency.

The incident of the wrangler came about when a colonel of a British

cavalry wanted a certain horse broken for his own use. The horse was one of those long limbed range animals, so nearly the ideal for cavalry purposes, that England bought by the thousands from the American ranges.

The horse trainer of that particular British cavalry outfit had his leg broken after two of his assistants had been thrown and more or less banged up by the "critter."

One of the Canadians happened to be looking on and heard the British colonel remark that he would give twenty pounds to have the beast broken but was

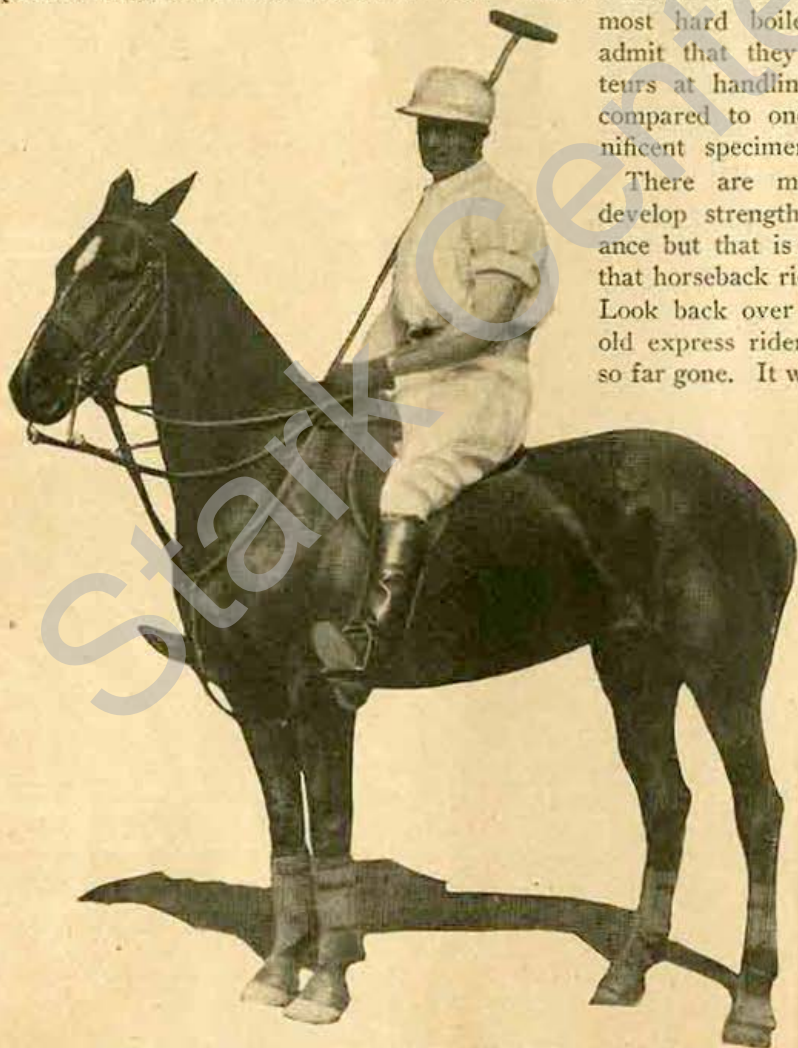
going to have it shot instead. The Canadian broke some rules of etiquette by asking for the twenty pounds in advance, much to the astonishment of the colonel and the consternation of his aide. Twenty minutes later he turned the horse over to the colonel's orderly, thoroughly subdued, and offered to break as many more as were wanted at one pound apiece.

But, to get back to the question of the world's best horsemen, there is an old saying in the West that a horse is twice as good a horse when there is a Comanche Indian on his back. Even the most hard boiled of wranglers admit that they are mere amateurs at handling a horse when compared to one of these magnificent specimens of tribesmen.

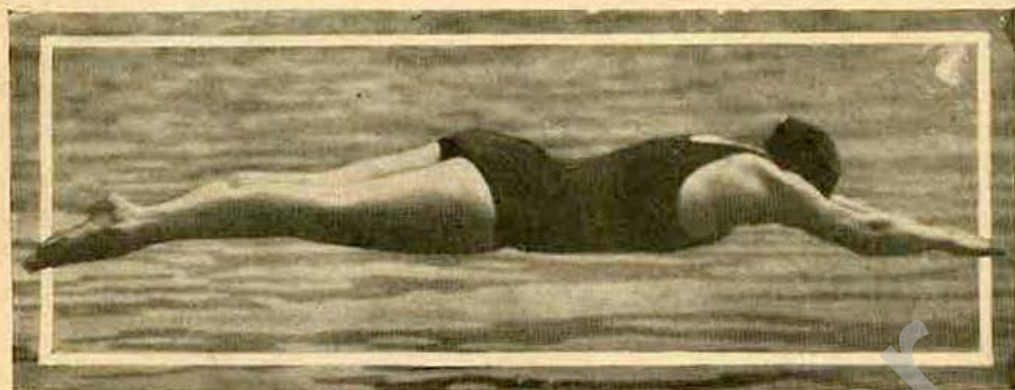
There are many things that develop strength without endurance but that is the greatest gift that horseback riding has to offer. Look back over the days of the old express riders which are not so far gone. It was no uncommon

thing for one of these men to remain in the saddle for thirty or more hours at a stretch and cover a couple of hundred miles. You get some idea of what that means by considering that the average day's march for cavalry is from twenty-

(Continued
on page 72)



Devereux Milburn, the great American International polo player



Keeping Down Flesh by Means of Exercise

By Gertrude Artelt

who has been acclaimed as "America's Most Perfectly Formed Woman"

As dictated by Miss Artelt to David Wayne of the STRENGTH staff of writers.

Poses and advice by Miss Artelt and a description and analysis of Miss Artelt's exercises by Mr. Wayne.

"I WONDER, Mr. Wayne, how many of the girls who read my first and second articles have paid me the compliment of trying the exercises I recommended. I hope there have been many, for then they can try some of the more strenuous stunts I have been saving for this last article.

"Training the body is something like arithmetic. The simple exercises you start with are like addition and subtraction, and the more difficult exercises are like sums in which you use all the elementary rules without being conscious that you do so. Very few women have much control over their muscles. I know that this will offend some of the ladies of the older school, and that they will sarcastically tell me that a woman who can sweep, and dust, and scrub, and tend to the furnace, and do the washing has pretty good control of her muscles.

"With this idea I beg to differ. I have never seen any Venuses or Dianas whose beauty of form was created by

doing housework. In fact if there is one class of women, who need exercises more than all other classes, it is those women who make a sacred duty of their household work. Many a woman has kept her house beautiful and immaculate, and has ruined her health and spoiled her figure in the process. For in most household tasks the body is necessarily kept for a long time in a cramped position that over develops some muscles, and leaves others untouched.

"I have seen many round-backed, flat-chested women who could have easily kept their figures by spending a few minutes daily at stretching and relaxing movements. I have seen many stoop-shouldered, thin-necked seamstresses, who could have had shoulders and neck that would grace any evening gown, if only a little daily exercise had been taken to offset the cramped position necessary in the hours spent with the needle.

"And you, and I, and everyone see every day hundreds of women who are

getting thick-bodied and clumsy, when they could have youthful figures for so little trouble.

"Most women spend more energy in inventing excuses to avoid exercise than they would spend if they exercised fifteen minutes a day. The exercises I have already given are sufficient to keep any woman from getting thick-bodied, and *that*, Mr. Wayne, is the ever-present dread of most women and girls. They want to look "willowy," and yet they cannot understand that the only way to look willowy is to actually *be* willowy.

"The best things a willow branch does is to sway and bend, and so swaying and bending exercises are absolutely imperative for the girl who wants to create a slender figure, or for the matron who wants to retain one.

"Having been brought up on exercise, I suppose I regard it differently from what most women do. Women want the results I've attained, but they aren't always keen about doing the exercises which produce such results.

"Even if the exercises I have given seem monotonous and tiresome, remember that every time you do a bending exercise you are banishing fat and prolonging youth. Just keep that in mind and the exercises will no longer seem tiresome.

"I do not insist that these exercises should be performed day in and day out. They are not necessary on the days you play golf, or tennis, or hockey, or when you go swimming, or even when you go for a good five-mile cross-country walk.

"In these games and sports you will use practically all the muscles you own. It is the all-round athletes who have the best figures. You will find that the exercise you do at home will help you tremendously in all your outdoor games. The hated daily grind will strengthen your muscles and keep them limbered up, and your lungs will be kept in fine working order. In fact, the girls who supplement their outdoor activities with home exercise in the off-seasons are the ones who win the championships. They never have to waste time getting into



Fig. 14



condition.

Of course games are just advanced work in exercises. A fast 20 minutes at basket ball is more valuable than the same amount of time spent at bending exercises, because you use more muscles at once, and you use them without a let up; that is unless you are one of the excitable kind that hops up and down around the edges of the field and shrieks at the girls who are doing the bulk of the playing.

"Tennis and hockey get every muscle in your body into action; tennis is the better of the two because there are not so many players, so you are more constantly active.

"But swimming and diving are the real sports for women. Did it ever strike you Mr. Wayne, that fancy diving is very much like advanced tumbling? In some cases diving is the more difficult of the two because the change in body position is made more slowly and that means more muscle-control.

"That is why diving is so very popular. There is such an awful lot to learn and you can learn it so safely, because the water is so much more comfortable to land on than a mat.

"These girls who do fancy-diving, work in hand-stands, somersaults, front and back flips, twists, and almost every trick of the tumbler. Everybody knows that in tumbling you use every muscle you have.

"I know you must have a lot of girl readers, who live in small towns where there are no hockey clubs nor any big swimming tanks such as we have in the cities. But in almost every small town

there is a tennis club, and in winter there are always chances for skating and skiing. In fact opportunities for exercise are never lacking, for those who want to exercise.

"It sounds strenuous, I know, but I would like to see every one who reads these articles take



Miss Artelt doing three fancy dives

up tumbling. The exercises I have given will enable anyone to get a certain amount of control, and it is easy to pass on from those exercises to the simpler tumbling feats.

"All you have to do is to get several thicknesses of old carpet, or even a discarded mattress, and you can practice "roll-overs," hand-springs, hand-stands, and cart-wheels. I do not advise much aerial work; for somersaults, and flips, where the whole turns are made *in the air*, are apt to cause strains and bruises.

"But hand-springs and the like, are within the capacity of every normal girl; and their great value is in the fact that they make you use your waist muscles. When you do free-hand movements, or calisthenics, the arms get almost all the work, and very mild work at that. Every time you do a "roll-over" or a cart-wheel, you give really hard work to the muscles of the waist; that is of the back, the sides, and the ones over the stomach.

"And I know that *girls* anyway, prefer to do stunts, than to merely keep on repeating movements which seem to them to have no particular use nor meaning.

"I have known gym classes to break up after a few lessons because the girls got tired of the same old drill; and I have known other classes to continue month after month because the instructor had the good judgment to give them

instructions in tumbling and in apparatus work.

"Women may not be able to compete with men in athletics that call for sheer strength and sheer speed; but in all gymnastic exercises they can do practically everything a man can do. The next time you go to a circus, just watch and you will see the women gymnasts doing everything the men do; and in some cases doing it better.

"Everyone admits that in fancy-dancing the women premieres are a little bit better than the men. Women have an advantage over men in that they are naturally more flexible in the waist and hips, and consequently they can do some gymnastic evolutions, and some tumbling tricks, with a greater ease, grace and smoothness than any man can compass.

"The exercises I am going to show you now are a little bit harder than the ones given in the last two talks. I think that if a girl or woman actually has only five or ten minutes a day for exercise she had better pick out of my list the few that she needs most. If her arms and shoulders are too thin, let her concentrate on the exercises that round them out. If her arms are good enough, but the waist and hips are too large, then she can omit the arm movements and concentrate on those that reduce extra flesh in the waist region.

"For the girl who belongs to no clubs,

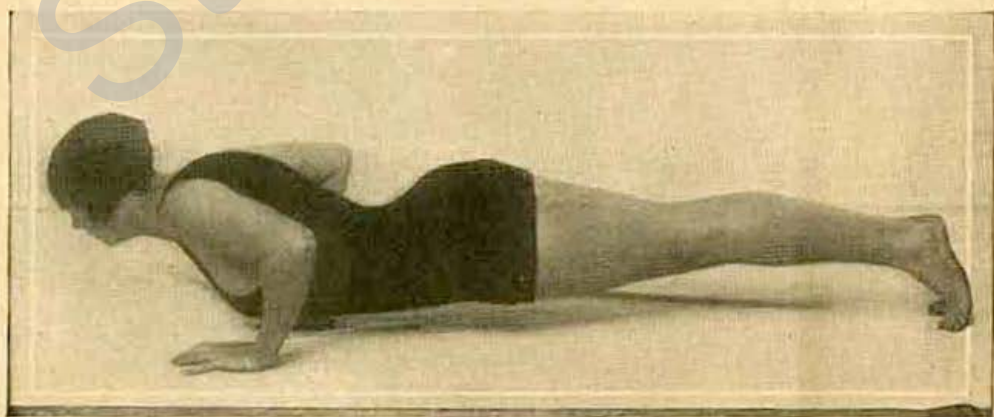


Fig. 15

and who cannot spare the considerable time necessary for outdoor sports, but who earnestly longs to possess the athletic figure, I suggest that she graduate as soon as possible from the exercises I have given and teach herself the tumbling stunts I recommended earlier in this talk.

"And remember this — while teachers and coaches are very necessary things, they are not indispensable. Possibly no girl can learn the best methods in any sport or game unless she has occasional advice from an expert, but in straight body-building work, coaching is not so necessary as in swimming, diving or hockey. Never omit your exercise because you have no instructor. It is better for your health and figure to exercise every day without an instructor, than to exercise only once or twice a week with an instructor."

EXERCISE FOURTEEN

In this exercise Miss Artelt stood on the right foot, and bending at the hips, she reached forward with her right arm, and backwards with the left arm and leg, as shown in Figure 14. It is not in the least difficult to assume this position, but it is difficult to hold it for several seconds, and the exertion of maintaining the balance calls into active play all the muscles of the waist and back. After holding the position for a few seconds, the upright position should be resumed and then the pose tried with the left foot on the ground, left arm forward, and right arm and leg pointing backwards. Several successive poses should be made on each foot, and practice should be continued until the body can be held perfectly steady in the horizontal position. Miss Artelt is doing this exercise in the easiest way; that is flat footed. The exercise becomes much more difficult when you stand on the



Fig. 16

toes, and you can try it that way if you like.

EXERCISE FIFTEEN

In the next exercise Miss Artelt rested the weight of her body on the toes and the palms of her hands. Then she bent her arms and lowered the body into position Figure 15. Then she raised the body by straightening the arms, and repeated the movement several times in succession. This exercise may seem to you like arm work and nothing else; but as a matter of fact it develops all the muscles along the front of the body from the chin to the toes. The beginner is apt to let the body sag at the hips, which is a great mistake. The body from neck to heels should be held as stiff and straight as a ramrod, and the raising and lowering is done by the arms. The exertion of holding the body in one straight line develops the muscles on the front of the thigh, on the front of the abdomen, and the muscles on the chest.

EXERCISE SIXTEEN

This exercise is the same as chinning the bar. As there was no horizontal bar in the photographer's studio, Miss Artelt performed the exercise on a swinging rope. This is very much harder than doing the chinning exercise on a horizontal bar or on a ring. While chinning seems to be purely a biceps exercise, it really develops all the muscles of the trunk. It is particularly effective in reducing the surplus flesh on the *upper* part of the abdomen. When you chin the bar your legs automatically lift into the position shown in Figure 16, and this lift of the legs causes a tension on the lower abdominal muscles. It is very much easier to chin the bar with the legs held out as in Figure 16 than when the legs are hanging straight downward.

Some of you may regard chinning as too strenuous, but we have Miss Artelt's word that there are few exercises which reduce one as quickly as chinning the

bar does. So it will pay you to have your father, husband or brother rig up a chinning bar (or a chinning ring) for you in your own home.

EXERCISE SEVENTEEN

In this exercise Miss Artelt held the left leg straight out in front of her and squatted on the right heel, as shown in Figure 17. She was able to repeat this exercise several times in succession, and she claims that the exercise can be accomplished more easily by a woman than by a man. It certainly seemed easy for an accomplished athlete like Miss Artelt, but for the rest of you I would suggest that instead of folding your arms you hold them out sidewise and rest them on the backs of two chairs. As you gain strength in the lower limbs and as you learn to keep your balance, you can dispense with the support of the chairs. This is an exercise which is a great favorite in all the schools of stage dancing. It is the constant practice of this exercise which gives the Russian dancers their wonderful strength and springiness. This exercise should also be practiced on the *left* leg.

EXERCISE EIGHTEEN

This is another combination exercise which throws a great deal of work on the arms, but at the same time develops the muscles of the abdomen, back and chest. Miss Artelt has sat crosswise on the side of the chair, with her feet held straight out in front of her. Then she rested her right hand on the back of the chair, and her left hand on the edge of the chair seat, and by pressing with



Fig. 17

her hands she raised the body into position Figure 18. She repeated this three times and then reversed her position and faced the other way, so as to equalize the work for the two arms.

In this exercise it is not very hard to raise the hips from the chair seat, but it is very hard to keep the legs in a horizontal line; and a few repetitions of this exercise each and every day will remove the surplus flesh if you have any, or if you are already slender, it will prevent any accumulation of flesh on the front of the body.

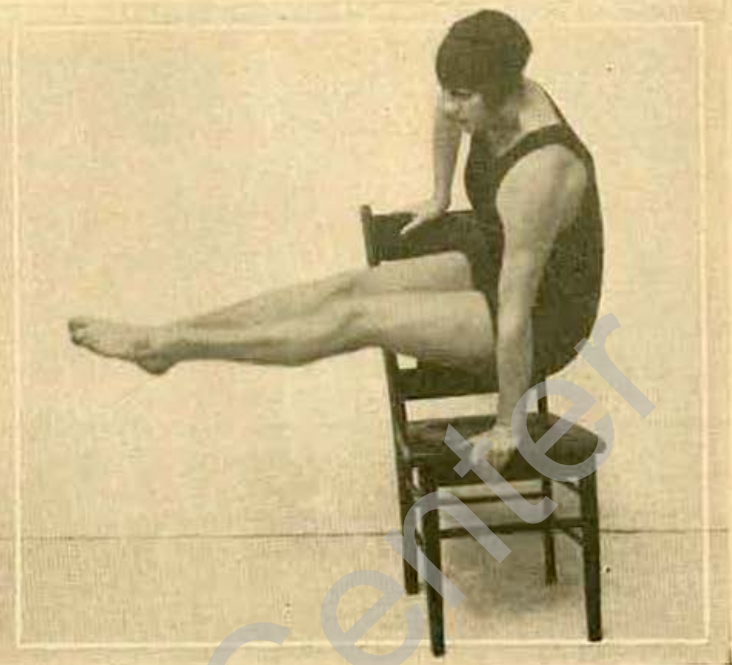


Fig. 18

HOW TO ARRANGE YOUR DAILY PROGRAM

Eighteen exercises would be too many for anyone to practice at one session. Women who are unused to exercise tire very easily, and they should carefully avoid taking so much exercise that they are more fatigued after exercising than before. Six to eight exercises are sufficient for anyone, because they can be performed in ten minutes time and leave one feeling invigorated instead of exhausted.

FIRST GROUP

Middle aged women and stout young women should start out by practicing exercises No. 1 to No. 5 from the February number, and No. 7 and No. 8 from the March number. Practice the foregoing every day for at least three weeks.

SECOND GROUP

Then change your program and practice exercises Nos. 9, 10, 11 and 12 from the March number, and Nos. 14 and 15 from the April number. This second lot

of exercises should be practiced every day for at least six weeks. By that time the stout individual will have not only cut several inches from the girth of her waist and hips, but will also have removed the fat pads which accumulate on the outside of the upper arm and at the top of the thighs.

THIRD GROUP

By this time one should be ready to take up the more advanced exercises in Miss Artelt's program, which are No. 6 in the February number, No. 12 in the March number and Nos. 15, 16 and 17 from the April number.

These last named exercises are perhaps a trifle too strenuous for the middle-aged, who should confine themselves to the exercises in the second group. The third group is intended for girls and for younger women, who wish both to perfect their figures and to make themselves "fit" to take part in vigorous outdoor games such as hockey, tennis, swimming and fancy diving.

Ridding Yourself of Your Big Waist-Line

By Alan Calvert

Reducing Exercises for the Fat

and some

Advanced Exercises for the Ambitious

ATENTION, all you fat people. You *have* muscles along the front of the abdomen. I know this will be news to many of you, because it has been years since you have seen these muscles. But nevertheless you still have them, and it will pay you to hunt them up.

I recall a play which was called "Buried Treasure," or something of that sort. An old gentleman, very wealthy and very vigorous, became worried over the poor health of his favorite nephew. Nothing he could say would induce the

young fellow to take any exercise. Sports, games, and outdoor life were not for him. If he was predestined to invalidism and an early grave, why fight against the fates? It was kind of uncle to worry, and he hated to hurt uncle's feelings, but exercise he would *not*. When uncle died he left a very moderate amount of money to nephew, but bequeathed him a farm, and, as a great secret, let it be known that untold treasure was buried in one of the fields. So, there was nothing left to do but dig. And nephew dug. He dug for months. The field covered several acres, and he dug holes and trenches all over it. About the time he was finishing the job, he suddenly realized that he was no longer sickly, but had become a very healthy muscular specimen, and it flashed on him that Uncle had put one over on him—that the "untold treasure" was health, and uncle had struck the one way to *make* him regain his health through exercise.

Good story, isn't it? Wouldn't have to bribe *you* to do anything for your own good, would they? Of course not! Why then, may I ask, are you worrying about your girth? Why are you so interested in dieting, and why are you continually *threatening* to take up golf, or



Fig. 1. To grip the post with the knees, bend back, pick up the object, and rise to a sitting position requires real strength of the waist muscles.

to do something desperate, like the "daily dozen."

Man! Your abdominal muscles are *your* buried treasure. Let them stay buried and you will suffer from many of the "ills that flesh is heir to." Bring them into sight, and you will no longer have to worry about your health or your appearance.

For once you get to a point where you take pride in the development of the abdominal muscles, and are able to flex them the way you flex your biceps, you will be wondering why you ever let yourself get fat.

Fat, and especially abdominal fat, is almost always preventable. If you are already slender, you can keep that way by two minutes work a day.

If you are fat, it is probably your own fault. If you puff when you walk fast, if you perspire too freely, if your personal appearance provokes the mirth of all beholders, you are a voluntary martyr, for you *can* have normal shape, the normal health, and the normal powers of digestion and assimilation. There are two things that keep a man fat; laziness and lack of knowledge. Any physical director, any physician and almost any athlete, can show you the exercises which reduce the waist line, but nobody can make you do them except yourself.

DIFFERENT KINDS OF FAT

Out of every twenty fat people, perhaps one is what we call "naturally fat." The extra tissue is deposited all over the body, and seems to affect neither the health nor the

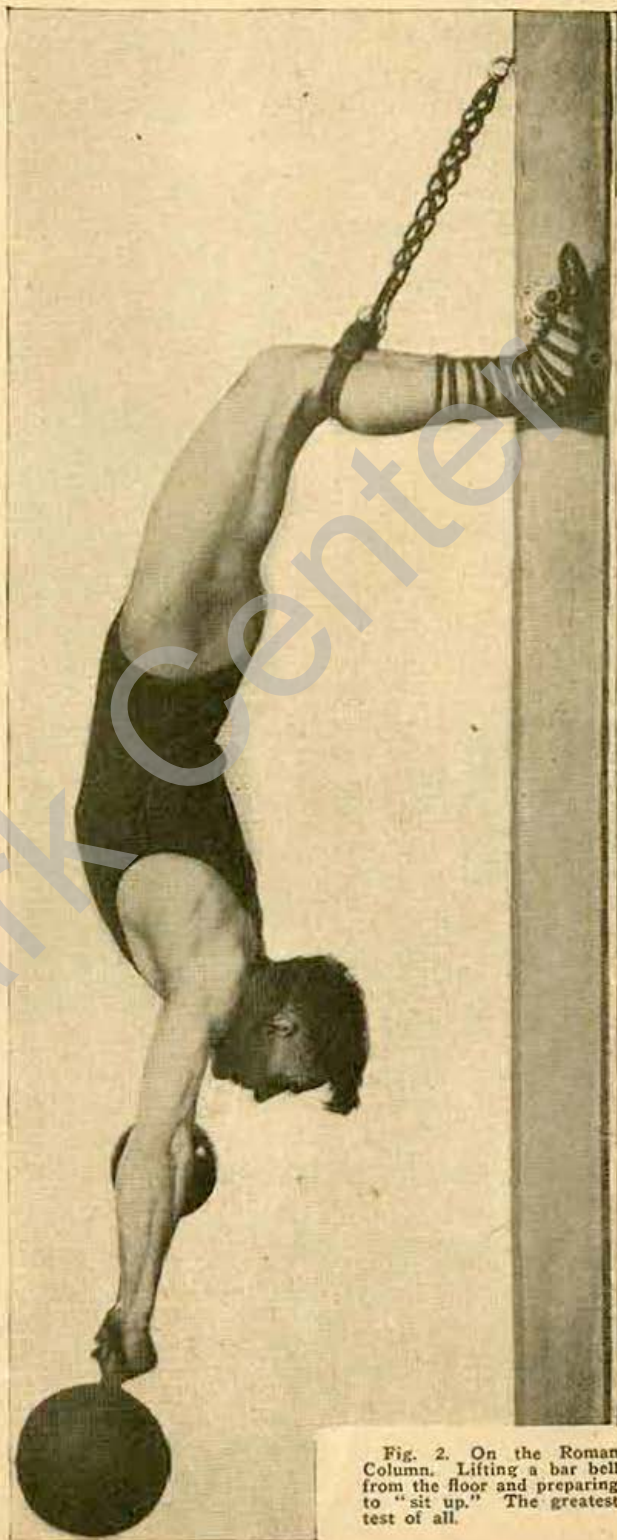


Fig. 2. On the Roman Column. Lifting a bar bell from the floor and preparing to "sit up." The greatest test of all.

activity of the owner and endurance.

The other nineteen cases of fatness start with a slight deposit of fat at the front of the waistline. The appearance of fat may be due to overeating, or inactivity, or both.

Fat cannot remain among the fibers of a muscle which is in constant use. That is why the first fat appears at the front of the waistline. The muscles of the small of the back are constantly busy in holding the body upright; hence fat rarely appears in that region. The muscles of the sides are affected later than the abdominal muscles but earlier than the back muscles.

When a man first commences to get fat, he bears, with good grace, the jibes of his friends. After all he has only a little "bay-window" and somehow he feels that a little extra fat is a sign of condition. So instead of getting to work and abolishing the fat while there is only a little of it, he *seems* to do everything he can to preserve it. Instead of bending and twisting, and in other ways promoting the activity of the abdominal muscles, he studiously avoids any and every movement that uses the said muscles.

He no longer polishes his own shoes, but always pays a boy to do it for him. If he upsets a pile of papers from the desk to the floor, he makes someone else pick them up. On the rare occasions where he has to pick up something himself, he actually has to lean sidewise instead of forwards in order to get his hands as low as his feet.

That is the whole trouble with growing fat. At the start a little fat does not interfere with his comfort, nor

does it impede his movements nor spoil his appearance. But fat is like a snow-ball rolling down hill; give it a start and it grows in size as it goes along.

The man who started with a slight layer of fat along his abdomen is fairly startled when he takes stock of himself a couple of years later.

His belly has grown to twice its former size. His sides, which formerly curved in at the waist, are now straight up and down. The muscles on his chest which were formerly flat and firm, now sag and seem to extend themselves into rolls of fat which pass under the armpits. The back of his neck shows rolls and creases. His upper arms are large, especially just where they join the shoulder. His hips have become very wide, and the upper part of his thighs so large that he "interferes" when he walks.

Every part of the man is now hung with fat except his fore-arms and the calves of his legs. His calves are kept muscular and shapely through his walking, and his fore-

arms through the mild, though constant use of his hands and fingers, and yet he never seems to be able to draw the conclusion that activity means freedom from fat.

The anatomical diagram (Fig. 3) will give you an idea of the muscles which compose the front and side walls of the abdominal cavity.

The pair of vertical muscles at the front are called the rectus abdomini—(or straight abdominal) muscles. At their upper ends they are fastened to the breast bone and at the lower ends to the hipbones. When these muscles



Fig. 3.—The skin has been removed from over the left abdominal muscle so you can see how it is divided into sections.

contract they bring the chest and thighs closer together. Note that instead of being composed of one long set of fibers, each of these front muscles is divided into sections. This arrangement makes it easier to bend the trunk, just as the division of the spine into separate vertebrae, makes it easier to bend the back.

At the sides of the waist, are a pair of muscles known as the external oblique. These muscles help make the side walls of the abdominal cavity, and their principal function is to bend the body sideways. It would seem that it should be just as easy to develop the abdominal muscles,

fibers of the muscles themselves, and fat in the cavity surrounding and interfering with the action of the organs. In cases where the paunch is extremely large, the front wall of the abdomen is distinctly stretched. When the subject is stripped you will find the skin stretched as tightly as the head of a tautened drum. And although you cannot see them, the muscles are likewise stretched, and have almost lost their tone, and the power to contract.

There are two elementary abdominal exercises which everyone knows. In the first you lie flat on the back and raise the legs to a perpendicular position. In the second you slip the ankles under a strap

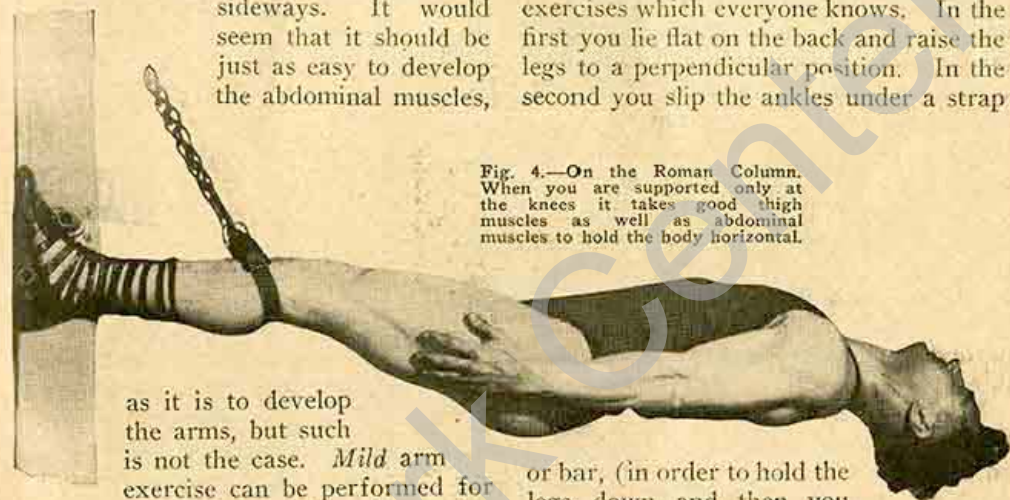


Fig. 4.—On the Roman Column. When you are supported only at the knees it takes good thigh muscles as well as abdominal muscles to hold the body horizontal.

as it is to develop the arms, but such is not the case. Mild arm exercise can be performed for extended periods without inducing the slightest fatigue. For example you can take a five pound dumbbell in your right hand, and curl it two hundred times without becoming either tired or breathless.

Even the mildest abdominal exercise causes fatigue and breathlessness after a couple of dozen repetitions.

STOUT MEN MUST BE CAUTIOUS

Fat which collects on the upper arms and upper thighs, may be unsightly, and it may produce discomfort, but it is not necessarily prejudicial to the health.

But fat on the front of the abdomen is a positive menace. At its first appearance it may be merely superficial, but as the corpulency increases the fatty tissue invades the abdomen itself, and then there is fat between the abdominal muscles and the skin; fat among the

or bar, (in order to hold the legs down and then you raise the body to the perpendicular.

A very plump middle-aged man is persuaded by some slender friend to try gym work.

The first thing the fat man is told to do is the second movement described above. The slender man lies down and quickly and easily brings himself to the sitting position 25 or 30 times. The fat man tries it, and at the third or fourth repetition he becomes almost purple in the face, his eyes bulge out, and he wheezes like a leaky pump. The friend shouts for him to continue, and he pluckily tries to keep it up, but the discomfort is too great and he has to stop. The friend jeers at him, and leads him on to some other stunt, and it is not surprising if the fat man declines the next invitation he gets to go to *that* gym.

The slender man, never having been fat, cannot conceive of the handicaps under which the fat man labors, and cannot realize that what is an easy, pleasant exercise for him, is almost a life and death matter for the fat man. Look you! When the thin man "doubles up" he experiences no discomfort because there is plenty of room in his abdominal cavity for the organs to make the slight readjustment of position necessitated by the cramped position.

The fat man has no such leeway. Remember that in a normally proportioned man the waist should be about eight inches smaller than the chest and at least 5 inches smaller than the hips. If a man with a 40 inch chest and 37 inch hips has a 32 inch waist, it is naturally easy for him to double over, or fold over, at the waist. But when a fat man has a 40 inch chest, 42 inch hips and 48 inch waist, then doubling up, becomes the hardest and most uncomfortable thing to do.

Why! a really stout man has the greatest difficulty in *sitting* on the floor with his legs stretched out straight in front of him; the minute he gets in that position he feels as though he was being slowly smothered. When he brings his body and legs to right angles, the mass of flesh at the waist line has to go somewhere. It is not compressible like a sponge, and so while external flesh is compressed into folds, the *contents* of the abdominal cavity are forced upwards. The diaphragm is raised and the heart and lungs have less space in which to work.

Take any object and fold it at its thickest part and you will appreciate the discomfort a fat man suffers every time he bends at the waist.

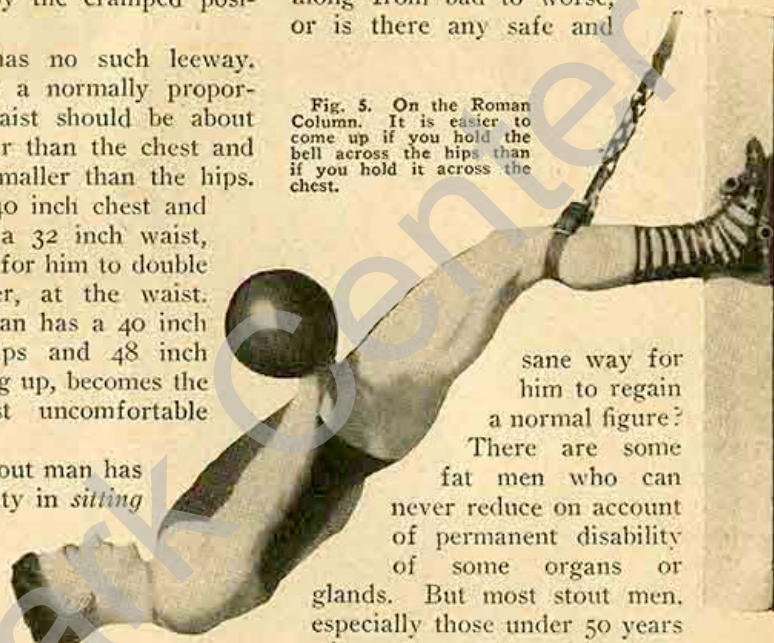
Add to that the facts that his abdominal muscles are flaccid through lack

of use, and his heart unused to vigorous work, and you will understand why I say a fat man must be careful when he starts to exercise. Some fat men should not even try the stunt where one leans over and touches the toes. Apoplexy could be induced by too many repetitions of that exercise.

WHAT IS A FAT MAN TO DO?

Should he give up, let himself slide along from bad to worse, or is there any safe and

Fig. 5. On the Roman Column. It is easier to come up if you hold the bell across the hips than if you hold it across the chest.



sane way for him to regain a normal figure?

There are some fat men who can never reduce on account of permanent disability of some organs or glands. But most stout men, especially those under 50 years of age can reduce themselves by means of exercise. *But*—they must remember that they are practically "muscular invalids," and as such, are compelled to begin their training with exercises of the mildest possible character. For example, to start out he should practice the first elementary movement on page 31 because in a stout man, the legs are rarely more than a third of the total weight of the body, so it is obviously easier to raise the legs ($1/3$ of the weight), than to keep the legs down and raise the body ($2/3$ of the weight).

The fat man should start with this exercise and repeat it half-a-dozen times, morning, noon and night. Every couple

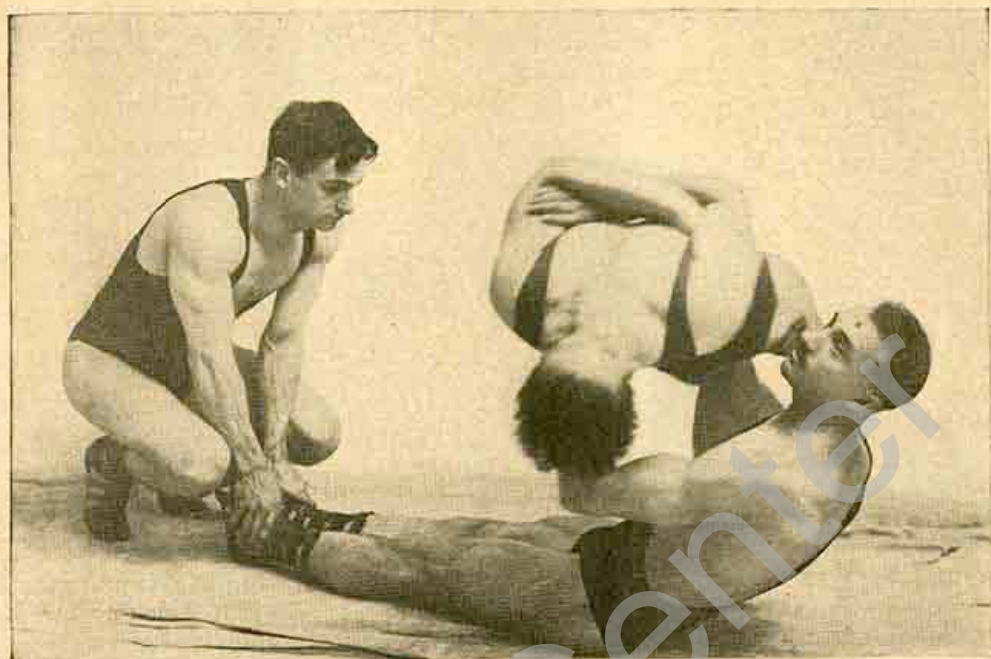


Fig. 6. If you think you are strong, try this test. Rise from reclining to sitting position while holding a 125 pound man in your hands.

of days he should add to the number of repetitions, and when he is able to slowly raise the legs twenty times, then, and not until then, is he ready for the second elementary movement on page 31.

By that time the forced action of the abdominal muscles will have started to burn up the surrounding fat; besides which the muscles will have gained in tone and strength.

Raising the legs throws the work on the front of the thighs and the lower part of the "straight" abdominal muscles, whereas when raising the body to a sitting position most of the work is thrown on the upper part of those muscles. So neither exercise is sufficient in itself to furnish all the required work.

When the fat man is ready for the second movement he will need something to hold his legs down. The best and simplest is a leather strap, fastened at either end to the floor, and yet loose enough to enable the feet to be slipped under it.

The fat man starts out, not by trying to sit up, but by raising his shoulders a

few inches from the floor. The movement must be repeated many times, as it trains the muscles, and strengthens them without causing the compression which smothers the fat man when he sits all the way up. For a week he raises one-quarter way up, and in the course of the day he should make at least 36 repetitions. Beginning the second week he raises the head and shoulders a bit further. He does the same in the third and fourth weeks, and by the end of the month he should be able to sit up straight.

If you want to reduce, the results come from doing an easy exercise many times rather than from doing a hard exercise once or twice. Give a fat man hard exercises and nine times out of ten he will quit on the third day. Give him easy stuff and he is so tickled at being able to do it that he will persevere with his training.

By combining the two exercises, and practicing them according to the progressive schedule described above, a really fat man can reduce his waist girth

4 inches, and his weight by 25 pounds in six weeks' time.

He will always find that as his waist grows smaller his wind grows better. Also he will suffer less from "rush of blood to the head, and from excessive perspiration."

The time it takes for a fat man to "come back" is in direct proportion to the time it has taken to become stout.

If your fat has all made its appearance in the last six months, you can get rid of it in six days' hard training.

If your "pot-belly" has been gradually accumulating during the last fifteen years, don't expect to get rid of it in fifteen days. It will require at least fifteen *weeks* and possibly as many *months*.

No matter how fat you are, your abdominal muscles will commence to make themselves apparent after a few weeks' practice. You will be able to feel them contracting and relaxing, and finally you will be able to discern their outlines. It is not that they push themselves through the fat, but that their action eliminates the fat that has hidden them. When you begin your training you should make a vow that before you quit

your abdominal muscles are going to be just as much under your control as are your biceps muscles.

There is positively no sensation in life that is quite equivalent to a physical "come back." I have known fat men to be just as delighted at the appearance of muscles on their abdomen, as old Christopher Columbus must have been when San Domingo made its appearance above the horizon.

ON ADVANCED EXERCISES

This whole article was supposed to be on advanced exercises, but having gotten started on the subject of fat men I found it hard to stop. After all it is perhaps more necessary to help reduce the mighty army of our stout fellow citizens, than to show a comparatively few enthusiasts how to reach the very peak of strength and development.

If you will examine almost any Greek statue you will find comparatively few muscles outlined. The arms, legs and back are beautifully shaped but comparatively smooth. The pectoral muscles on the chest are always shown distinctly; so are the muscles on the sides

(Continued on page 66)

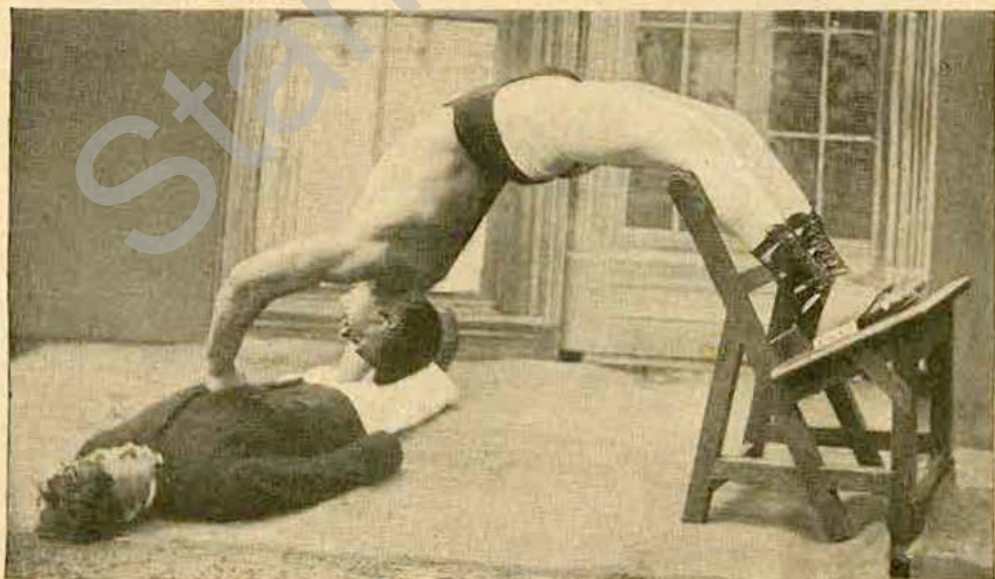


Fig. 7. The Roman Chair. It takes great strength to raise your own body from this bend to a sitting posture; but some athletes can bring up another man with them.

RUPTURE

By Dr. Randolph Faries

Rupture is a subject little understood by lay-people and this is especially true of the dangers to which those who exercise are exposed. Persons suffering from rupture and wishing to be cured should place their case in the hands of a most skillful surgeon as the only radical cure for rupture is an operation.

Dr. Faries, in his articles, has made it very plain to the readers of STRENGTH just how and why rupture occurs and he takes up its prevention, treatment and cure, with all the thoroughness of a competent physician.

BEFORE taking up the kinds of ruptures which are most commonly met with, i.e., intestinal ruptures, it is necessary to explain some points in anatomy. The most common rupture met with is known as "Inguinal Hernia," or rupture in the groin. A second rupture which is quite common is called "Umbilical Hernia," or hernia of the navel, and a third rupture is spoken of as "Femoral Hernia," or one occurring in the neighborhood of the upper part of the thigh. In order to understand the different kinds of hernia it will be necessary to describe their anatomy in a very superficial way so that my readers may get a general idea of the chief parts of the body where hernias occur. The abdominal region is most commonly affected. The term "hernia" (rupture) signifies a protrusion of any portion of the viscera through an abnormal opening in the walls of the cavity within which the protruded part is naturally contained. A protrusion through a normal aperture is not a hernia. In writing this article I desire my readers to remember that I am dealing with "Abdominal Hernia," or, as it is commonly called, "Rupture."

A hernia may occur in any part of the tissue composing the abdominal wall, but rupture most commonly occurs where the muscular and tendinous structures are weak, such as the groin, at the umbilicus, or where the femoral vessels pass into the thigh. It is always well to know the cause of a rupture, because by so doing an individual can avoid being ruptured. Causes which predispose to rupture are: The general condi-

tion of the individual, age, violent exercises, straining and coughing. The majority of ruptures occur in early adult life; that is, up to the age of thirty-five years, after this ruptures may occur, but are not so frequent until old age is reached. Sex plays a very important part in reference to ruptures. The male sex is decidedly more predisposed to rupture than the female; the proportion of occurrence being about three to one. Occupation plays a very important part in causing rupture; more occurring among the laboring class than those whose occupation requires mental effort. Inheritance also predisposes to rupture by causing some abnormal and peculiar anatomical deformity in certain tissues; for example, an abnormal lengthening of the mesentery (the tissue between the folds of intestines), wounds, such as gunshot, incised or lacerated wounds are a very frequent cause of rupture. Anything that weakens the abdominal walls, such as an abscess, will also produce rupture.

The causes of rupture have now been considered, and next in order are the symptoms. Very frequently an individual experiences a sensation of weakness somewhere in his abdomen; it may be in the groin or elsewhere. This weakness is a warning that later a protrusion will take place, and this warning should never be lost sight of. When a rupture gradually develops a small tumor appears, not larger than the tip of the finger; it can easily be replaced and disappears spontaneously when the individual assumes the recumbent position. If a rupture is fully developed it forms an oval or round

tumor, broader below than above, increasing in size when the individual is in the erect position, coughing or holding his breath. When he assumes the reclining position it disappears and can usually be easily reduced within the abdomen with gentle pressure; and reappears when the erect position is assumed. Whenever the individual who suffers with a rupture coughs a distinct impulse is commonly transmitted to the finger of the examining physician. All symptoms of a rupture are somewhat modified by the nature of its contents. If the rupture contains the bowel only the tumor is smooth, gurgles under pressure and is frequently resonant when percussed. A rupture is often accompanied by a flatulent rumbling, and the individual frequently complains of indigestion that causes severe dyspeptic symptoms which are extremely annoying, and in many cases alarming. When the rupture is reduced to its proper place, a sudden slip of the bowel takes place, which indicates that the bowel has resumed its normal place in the abdomen. A hernia of the stomach or bladder rarely occurs. When such a condition does occur it is grave and a skilful surgeon should be consulted at once in order to avoid grave consequences.

Persons who do not suffer with hernia (rupture) can by judicious exercise so strengthen the abdominal walls that it is well nigh impossible for such a trouble to arise. To strengthen the abdominal walls one should be familiar with a scientific course of exercise applied to the muscles of this region. Without going into the anatomy of this region in detail I shall describe in a general way movements that will strengthen these muscles. In the beginning I may say that I do not know of any better way to develop these muscles than by using light wooden dumbbells. These should be held in the hands with the arms extended their full length above the head; the feet should be close together; in this position the individual should lean straight forward

and downward as far as possible, without straining himself, and then return to his former position. This movement should be repeated very carefully from fifty to one hundred times; the movement should be indulged in slowly at first and its rapidity gradually increased. The next movement is one of bending obliquely to the right and downward, returning to the original position; the third movement is that of bending obliquely downward and to the left, and returning to the upright position. After this the dumbbells should still be held above the head and the person exercising should lean sideways, first to the right and then to the left; in this way the chief muscles of the abdomen are brought into play and will be greatly strengthened. Moreover, the individual has also been developing the erector muscles of the spine, as well as the lumbar muscles, or those in the region of his loin.

The above movements may all be modified by stepping obliquely forward to the right and bending over, and then to the left and doing the same. This will help to develop some of the muscles in the lower extremities also. When a rupture has once occurred the treatment becomes either palliative or may aim at a radical cure. The palliative treatment consists in preventing the rupture by the application of a suitable truss. If the rupture is one of a ventral or umbilical nature, an elastic band and pad may be used; on the other hand if the rupture be an inguinal, rupture in the groin, a truss may be used. Here I may mention that a truss that does not fit perfectly is worse than nothing, because it will cause irritation which results frequently in setting up an inflammation which causes the rupture to become strangulated, often requiring a radical or surgical operation to save the patient's life, especially if gangrene is threatening or has actually occurred. Before applying a truss it is absolutely necessary to see that the rupture has been completely reduced, and this is of vital im-

portance, or trouble will follow thereafter.

Those who wear trusses may remove them at night, being removed after the individual is in bed and reapplied before he arises; at other times the truss should be constantly worn. It is a good rule for any individual who is ruptured to have two trusses, so that if one breaks he may immediately apply the other without having to go and purchase another, in this way being safe-guarded against any possibility of strangulation in the meantime. Every one who is ruptured should also be provided with an extra truss with a wadding pad which he should always wear when bathing. In any case when the pad of a truss tends to produce chafing, which is apt to occur in hot weather, the part should be washed frequently with Cologne water and well dusted with some good toilet powder. I cannot impress my readers too strongly with the extreme importance of constantly wearing their truss, and never allowing the rupture to descend from its proper position. There is a certain condition which should never be lost sight of, namely an undescribed testis in such a part of the inguinal canal rendering the pressure of a truss-pad unbearable; here a scientific effort should be made to accomplish the wearing of a suitable truss by trying different kinds of trusses until one is found that is suitable.

Let us now consider the radical cure for rupture. This requires operative measures and should always be in the hands of a most skilful surgeon, because he has had unlimited experience, and knows exactly what to do, being thoroughly familiar with the anatomy of the parts in every detail, and from his knowledge a permanent cure will result; especially if the patient follows the instructions he is given, in regard to the after treatment. No one who has had a radical operation for rupture should engage in very violent exercise or heavy lifting afterward, and great care of the

part should be taken at all times, for at least a year. After this, one may indulge in exercise of a moderate nature. After the wound of a radical operation has completely healed, gentle exercises may be indulged in, and these should be directed especially to all of the muscles covering the abdomen.

I have already mentioned Strangulated rupture; yet it will not be amiss to explain in detail some of its most important features. When strangulation occurs the circulation supplying the rupture is materially interfered with, inflammation and ultimately gangrene of the protruded viscus inevitably results if the strangulation be not reduced; the intestines lose their function and obstruction of the bowel follows, this being a very serious result, which endangers life and requires a resection of a portion of the bowel in order to save the patient's life. Very serious symptoms arise when the bowel becomes strangulated; there is persistent vomiting with constipation, causing a general peritonitis, which endangers the individual's life and may cause his death. Persons suffering with rupture should bear this in mind and never allow the symptoms I have just mentioned to occur; but always be under the advice of a skilful surgeon in order to prevent them. Posture plays a very important part in those who are ruptured, especially when neglecting to wear a truss. The bowel by protruding through an abnormal opening, not only dislodges itself, but also makes its effects felt on the other organs in the abdominal cavity, such as the stomach, liver, spleen, etc. Owing to a dragging upon other portions of the bowel, there often occurs a diminished flow of bile which causes constipation, resulting in headaches and all kinds of digestive disturbances; the latter frequently leading to serious diseases. In many cases anaemia, (poor blood), can be traced to a rupture, this having produced poor digestion both of the stomach and bowel, for a long time.

(Continued on page 64)



Miss LILLIAN LEITZEL

The World's Greatest Gymnast

By P. H. Paulinetti

It is seldom that you find an artist who inspires applause both from the public and the profession.

When you go to Ringling's Circus and it is Miss Leitzel's turn to perform, the management does an unprecedented thing. It halts the performance on all the rings and stuges, so that no spectator shall be distracted while watching Miss Leitzel's wonderful act.

Her personal beauty and her exquisite daintiness make such a startling contrast to her heroic feats of strength, that she invariably arouses her audience to the highest degree of enthusiasm. She is, undoubtedly, the best loved of all circus performers.

The public admires her, but it takes "the profession" to really appreciate her. To the public her work is merely thrilling; to her fellow professionals her work is the acme of perfection, which they admire without a trace of envy.

Her separate feats are so extremely difficult that we despaired of describing them; but we were finally fortunate enough to induce Mr. Paulinetti to prepare an article describing the technical side of Miss Leitzel's work.

Mr. Paulinetti is now retired from active work, but in the past he occupied almost as lofty a place in his profession as Miss Leitzel does today.

He has the further advantages of having known Miss Leitzel personally and of having watched her steady development from a "child wonder" to the greatest gymnast of all time.

In some places Mr. Paulinetti's descriptions are quite technical, but knowing that he is, perhaps, the highest authority on gymnastics, we are sure that his descriptions will be understood and appreciated by the hundreds of gymnasts who read this magazine.

TO Call Miss Leitzel the "World's Greatest Gymnast" is no overstatement. Miss Leitzel is in a class by herself. Her remarkable physical accomplishments and her abilities as a gymnast are immeasurably superior to those of any competitor. All other gymnastic "stars" pale into insignificance in comparison with her. The feats with which she opens her act, are the ones that other great gymnasts use as a climax.

Miss Leitzel owes her eminence to inheritance, plus scientific training. Her mother was the leader of the famous "Leamy Troupe of Lady Gymnasts," an aggregation of stars that had the reputation of being the best "aerial gymnasts" in the world. At the age of thirteen Miss Leitzel made her professional debut as a member of this troupe, but before she was considered fit to appear before the public she had seven years' intensive technical training, under

the skilled tutelage of her famous mother.

This early training consisted largely of what is known in the profession as "turning out the lower limbs." The legs, body and arms are trained to work in unison, by the method taught in the higher class of ballet dancing.

This special training is the preparatory stage in the development of a "superior artiste." Later, by blending this "turning out" process with the learning of gymnastics, the artist has the inestimable advantage of having a complete mastery of the proper positions required in any new feat. For the proper training of the lower limbs is just as essential as the proper training of the body and arms; and this is true even though all the feats are done when hanging by the hands.

The correct management of the lower limbs is one of the marks of the finished performer, and for this reason any ex-

pert on seeing Miss Leitzel's action photographs, immediately pronounces her a supreme artist. It is not necessary to see the lady perform; the pictures tell the tale.

After becoming proficient in the preparatory exercises, Miss Lillian was coached in advanced trapeze and ring work, her training consisting of the general "routines" usually employed in these branches of the gymnast's art.



She slips her right hand behind her and grasps the ring. You might be able to hold your weight that way, but you would find it impossible to keep your body upright as Miss Leitzel does.

There are two distinct classes of exercises on the trapeze and rings, and they are differentiated by professionals as "swinging tricks" performed while the apparatus is swinging; and "still tricks" performed while the trapeze or ring is hanging still.

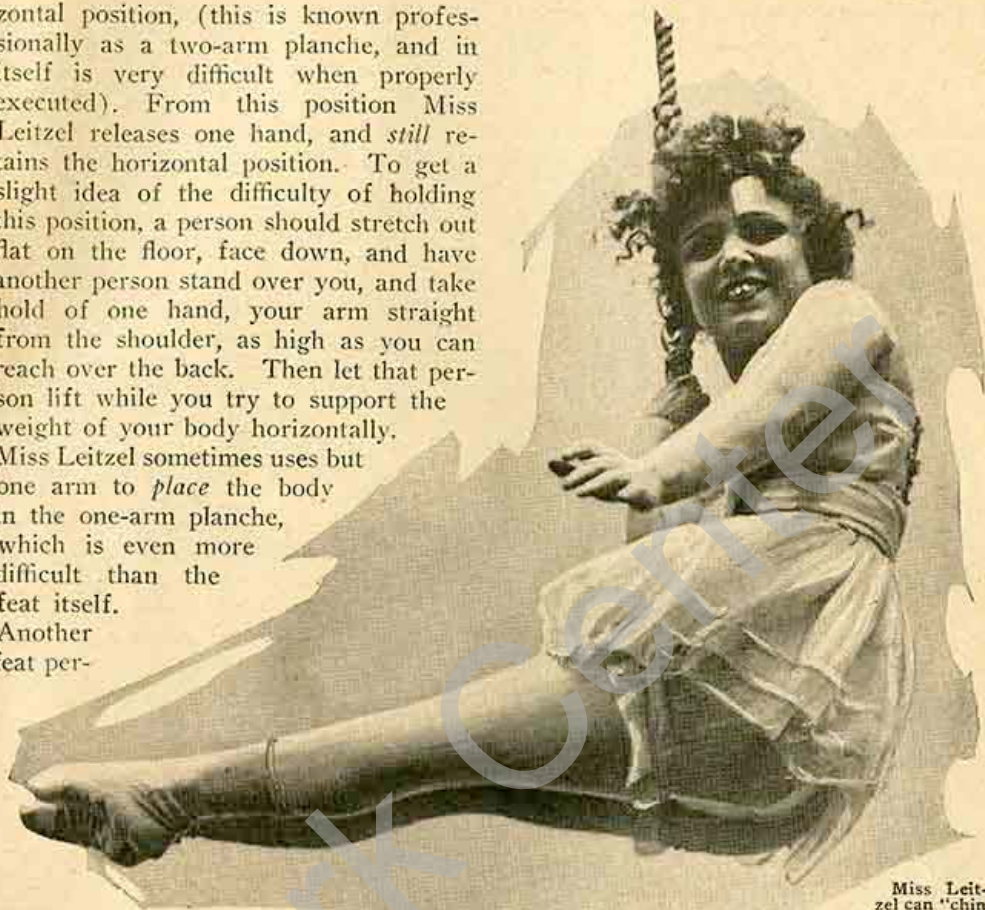
Miss Leitzel's performance consists entirely of the most difficult of the "still tricks" and this class is the most difficult of all gymnastics.

While performing the "still tricks" the spectator can see exactly what is being done, whereas swinging, or "flying" feats cannot be properly followed, unless the spectator be an expert. The flying feats are infinitely easier than the still feats. Miss Leitzel is the only lady gymnast who has ever taken up the latter class of exercise exclusively and she has left the greatest of competitors (both men and women) far behind in this line.

Taking up some of the extraordinary feats performed by this young lady, the following is one which she says is very easy. You take hold of the rings, and as the school-boy says, "skin the cat"; that is, draw your feet up in front, pass them over the head, and hang down at full arms' length. Then draw the body up with the arms until your back touches the rings. This is accomplished by the same process as pulling up to the chin, only your arms are in back of the body instead of in front. There seem to be muscles used in performing this feat, that are not used in any other kind of exercise.

A "one-arm planche" held properly, is another feat that has never been performed by any other woman. This feat is accomplished by holding the rings with both hands, drawing the feet up in front, passing them over the head and straightening the body and legs full length from the shoulders in a hori-

zontal position, (this is known professionally as a two-arm planche, and in itself is very difficult when properly executed). From this position Miss Leitzel releases one hand, and *still* retains the horizontal position. To get a slight idea of the difficulty of holding this position, a person should stretch out flat on the floor, face down, and have another person stand over you, and take hold of one hand, your arm straight from the shoulder, as high as you can reach over the back. Then let that person lift while you try to support the weight of your body horizontally. Miss Leitzel sometimes uses but one arm to *place* the body in the one-arm planche, which is even more difficult than the feat itself. Another feat per-



Miss Leitzel can "chin herself" 27 times in succession with one

formed by this young lady

is what is known as a "throw in." The artiste hangs at arms' length by one arm, draws the feet up backward, then forward quickly, forming a harmonious movement with the lower limbs, the free arm and head, and with a quick twist of the body upward (toward the arm holding the ring) catching the body in a lying position, resting with the back on the arm holding the ring, in a semi-horizontal pose. This is child's play for Miss Leitzel; she can easily perform from forty to fifty or more of these feats in quick succession.

She still goes further by doing what is known as a forward "throw in" (op-

arm; and what is more, she can do it without any appearance of exertion.

posite to that of the backward) the body resting on the arm slightly bent forward across the stomach; from this difficult position to start, the body is turned over from the front to the back position (of the throw-in) by a slow movement, *not* allowing the body to hang down during the movement, before drawing the body over the arm backwards. A gymnast who is strong enough to *hold* the body in this forward position, finds it impossible to even commence the first part of the movement, which is, by far, the easiest part.

Still another difficult feat which no other woman gymnast has ever been

known to accomplish, is the forward planche. This is performed by hanging at arms' length, drawing the body up until the chin is level with the hands and then laying the body and legs out full length horizontally, face up, the arms straight from the shoulders to the hands. This feat is very seldom performed correctly, even by the greatest of male

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achievements might be.
the most extraordinary
Miss Leitzel does is
rope, employing what is
a one-arm "roll-up"
pose, instead of the
way of hand-over-



Hanging by one hand and whirling her body round and round, like a pin-wheel is easy for Miss Leitzel. She is the only gymnast in the world who can do this stunt.

gymnasts in the world.

The crucifix, or cross, is another of the most difficult positions to hold on the rings, which no other woman has ever accomplished. This feat is performed by starting from a vertical position, the arms at the sides, holding the rings against the hips, the body upright, then lowering the body slowly with the arms straight, until the hands and shoulders are on a level; then *retain* this position. The effort in trying this feat has discouraged many male gymnasts, while Miss Leitzel performs it with ease.

When ring performers do "hand stands" on the rings you will notice that they have their arms braced against the upper part of the rings and against the ropes. Once while visiting London the writer saw Miss Leitzel accomplish a free hand-stand (without touching the rings or ropes with the arms) the very first time she tried it. At that time this young lady was not more than thirteen

hand. The "roll-up" is a slow movement and is performed by Miss Leitzel by taking hold of the end of a hanging rope with one hand, the body hanging at full length. The head is turned away from the arm holding the rope and by action of the shoulder muscles, the body is slowly rolled up with the back resting on the arm, allowing the performer to reach up with the free arm and catch hold of the rope *above* the arm engaged in holding. Then the body is rolled up on the other arm in the same manner and this forms the climbing process.

Miss Leitzel, while engaged at Madison Square Garden, New York, climbed up to the rings by this roll-up process, while the rings were hanging near the roof of this great structure. This great feat has never before been performed by man or woman. It will be seen that Miss Leitzel uses each arm equally in performing these great feats.

A mighty feat of strength and en-

durance is that with which Miss Leitzel finishes her performance. This feat has no technical name in gymnastics, for the reason that it was originated and is performed only by this gymnastic genius, and has not yet been attempted by others; although she has been doing the feat in public for the past few years. I shall name this extraordinary "stunt" a one-arm giant-swing. It is performed by grasping with one hand a loop at the end of a hanging rope, the body and legs hanging straight down. The legs are then started in motion back and forth, in the same manner as you would snap a short whip downward, hanging by the side, increasing the height of the feet each time until a vertical position is attained head downward. Then a circular swing is commenced, using the shoulder as a pivot and the body turning in a circle at full length from the shoulder. These revolutions have been kept up continually for one hundred and fifty times by Miss Leitzel. To partly realize what this wonderful feat really means, a very strong person has only to take hold of a pair of rings, and try to hang by two arms for three and a half minutes (the time it takes for the 150 revolutions performed). This will give a faint idea of the phenomenal strength and endurance required to accomplish this marvelous feat. It should be understood that at the end of each revolution there is a tremendous jerk on the arm. This is caused by what is known to gymnasts as "beating" with the lower limbs and is employed to keep up the momentum of a swinging revolution. This beat which occurs at the lowest point of the revolution increases the



To do a hand stand on the flying rings is about one hundred times more difficult than doing it on the ground.

weight of the performer almost double on account of the severe jerk. Just think of this extra weight coming on one hundred and fifty times while hanging by one hand.

Miss Leitzel does not perform the conventional tricks of other gymnasts, and no other gymnast could possibly duplicate her performance. It is also very safe to say that she could out-distance any gymnast, past or present, in straight rope climbing.

Besides her intrepid feats of skill and dexterity, Miss Leitzel stands supreme in actual feats of strength as well. In

Philadelphia about five years ago, in a test before Mr. William J. Herrmann (one of America's leading gymnasts) the following remarkable feat was performed by Miss Leitzel. On this occasion she did twenty-seven continuous "one-arm pull-ups" with the right arm and seventeen with the left arm. Every "one-arm chin" was performed in perfect form and style; a world's record that will stand unbroken for many years to come.

Swimming is Miss Leitzel's recreative hobby, in which she is an expert, and finds in this exercise one of her greatest enjoyments.

Heredity surely must count in the case of this young lady, as her father, Mr. John D'Osta, a European gymnast, was a finely built, clean-living gentleman and the very finest ring performer of his time. Miss Leitzel proudly shows a photo of her mother in gymnastic costume at the age of fifty-six years and still doing an aerial trapeze act alone. The photo was taken in May, 1922, just prior to her mother's retirement from professional engagements. The beautiful face and Venus-like form of "Zoe" (the mother's professional name) would do great credit to most of the young ladies of today at twenty; so Miss Leitzel may well be proud in showing this wonderful photo.

The Ringling Bros., the greatest showmen at the present time, were not slow in going to very big expense to secure this great artiste from Europe for their Ringling Bros. and Barnum and Bailey's "Greatest Shows on Earth," with whom Miss Leitzel has been engaged for a number

(Continued on page 74)



The difficult stunt of "rolling up" on a rope. See Mr. Paulinetti's description of this feat.



A tiger is about the world's "toughest customer" when it comes to a scrap. The tremendous "upper arm" is easily seen in this pose.

The Strength of Animals

By Ralph Hale

OVER in the Bronx Zoo in New York City, there is a big Alaskan bear which is popularly supposed to be the strongest animal in the Western Continent.

He is a massive beast, as tall as a good sized bull, and immensely thick set.

It is not unusual for these big Alaskan grizzlies to weigh around 1400 to 1500 pounds, and as this particular specimen is a notable monster, his weight is probably in the neighborhood of 1800 pounds. It seems that in fitting up his den they provided him with a bridge in the shape of a huge log which spanned a gap from one pile of rocks to another. It seems that Bruin was not satisfied with the arrangements, and

after dislodging the log, picked it up and carried it away to one side of his den. I saw a photograph of him where he was standing on his hind legs with the log held horizontally in his fore-legs, just as a man might carry a rolled up mattress.

The log looked to be about two feet in diameter and about sixteen feet long, and if I remember rightly, its weight was given as nearly 4000 pounds. That would mean about twice the weight of the bear, which would not be such a remarkable feat.

I know more than one man weighing 200 pounds who would make nothing of carrying a 400 pound log in that manner for a short distance.

When a bear has a heavy object to

transport, he rarely drags it along the ground, but carries it in his arms (fore-legs) and there are authenticated stories of a thousand pound bear having thus carried a thousand pound elk over several miles of broken country.

The strength of a bear's fore-legs is proverbial. The "hug of a bear" is a standard comparison of strength. A husky he-bear can swap blows with any animal that walks. One smashing blow from his fore-paw will break the neck of a buffalo-bull or flatten out the skull of any smaller animal.

It must be borne in mind that it is utterly unfair to a man to compare his strength with that of almost any quadruped of equal weight. A man can move about for hours at a time and scarcely employ the muscles of his arms and shoulders. A quadruped uses his fore-legs and his shoulders with every move he makes; consequently his fore-parts become much stronger than the upper parts of a man.

An animal's fore-legs do not always appear to be very strong, but you must bear in mind that you see only the part that corresponds to a man's fore-arms. The upper-arms (or upper-fore-legs) of a quadruped, lie close to his ribs and are usually *under* the skin that covers the trunk of the animal. Therefore, the part which you see is the weaker part,

the more powerful part of the limb becoming apparent only when unusual stretching or exertion makes it bulge out through the skin.

A bear is strong when walking on his hind legs, but he is many times stronger when he is on all four legs. In that position he can drag incredible weights. I believe that the average bear could out-pull a pair of Missouri mules, and this is going some.



A lioness like this one, is big enough and strong enough to kill and carry off a half-ton bullock.

They tell a story of a medium sized black bear who broke loose from his wagon-cage in one of our big circuses. He was a surly beast, so the keeper attempted to lasso him, but the noose was too large and instead of tightening around his neck, it allowed one fore-paw to slip through. The lasso was diagonally around one

shoulder, and when the keeper threw his weight on the other end of the rope, he went sailing through the air like a toy balloon. A couple of brawny circusmen caught hold of the rope, and immediately were towed along in ten foot strides. The bear did not even know they were there. The circus owner swears that the bear did not stop until forty men had seized the rope and acted as a drag.

In comparing the strength of men and animals, man always appears at a disadvantage. In the first place he has so



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A lion looks slender—until you get close to him. A full-grown male weighs five hundred pounds and has the strength of six men.

much less power of traction. His two feet give him only a tithe of the pushing or pulling power of the animal who can use four feet simultaneously. The custom of wearing shoes has partially incapacitated the feet of the civilized man. It may seem odd to consider the feet as a factor in a man's power, but it is a fact that the average Zulu warrior who has never worn shoes can far out-pull or out-push the shoe-wearing Caucasian.

The traction-power of some of the smaller quadrupeds is simply amazing. I have seen a 40 pound bull-dog tow along a 200 pound colored man. The darkey wanted to stop but the dog would not let him. All four of an animal's feet are fitted for gripping the ground, and in some cases also for climbing and delivering blows.

Size for size, the members of the cat family are much stronger than the members of the dog family.

I say "size for size" purposely, because a feline will always outweigh a canine of equal strength.

It takes a very big dog indeed to weigh as much as 150 pounds, while a comparatively small leopard will weigh 200 pounds. A tiger seems to be built on slender, graceful lines, but they average from 400 to 500 pounds in weight, and a really big lion will weigh 600 pounds.

There is absolutely no comparison between the strength of, say, a Great Dane, and a puma of equal weight. The big cat would kill the dog before the latter knew the fight had started. There are plenty of authoritative cases where a big puma has killed a cow and carried it off bodily, a thing which no dog could possibly do.

We are so accustomed to seeing the ordinary house cat around us, that we fail to realize its prodigious strength

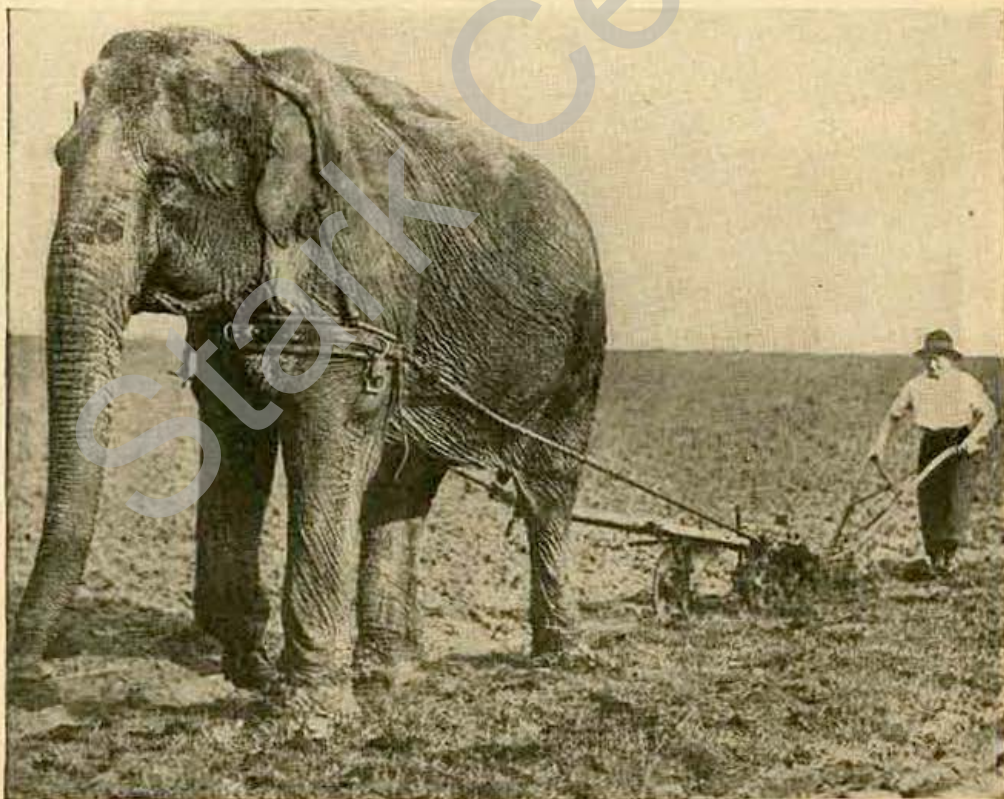
until we start to analyze its performances. The ordinary tabby can stand on its hind legs and reach about 24 inches up on a wooden fence. A man can reach up about seven feet and a half. A cat will mount a seven foot fence in two motions. The first spring will carry it half way up. It gets a momentary "clawhold" and with another convulsive effort reaches the top of the fence. Now just imagine a man getting to the top of a 24 foot fence in two movements, even if there was an artificial handhold half-way up. A cat can hurl its weight forward, or upward, to a much greater distance in proportion to its own length than a man can.

I have frequently read stories of a brawny backwoodsman killing wolves, or wild dogs with his bare hands. (I

saw two such accounts within a twelve-month. One in Minnesota and one in Maine.) No man could possibly survive a man-to-beast encounter with a puma, jaguar or leopard, any more than he could hold his own with one of the larger apes.

All the felines, from the lion down to the domestic pussy, have a sort of convulsive strength that is denied to the dog family. A dog or wolf will run for hours on end, but while a member of the cat family can travel like a flash of light for a minute or so, he cannot keep it up. On the other hand, he packs a terrific punch. A lion can knock a 1500 pound buffalo clean off its feet with one swipe of a fore-paw.

I once saw a peculiar demonstration of a lion's strength. I paid a visit to



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An elephant can pull a loaded freight car, and a waste of power like this would be enough to arouse the ire of Mr. Henry Ford.

the winter quarters of a circus in the effort to get some action pictures of a celebrated "strong man." This chap was a perfect giant. He stood 6 feet tall and weighed 275 pounds. His chest measured over fifty inches. As he was showing me over the establishment, he paused a moment in the stables. He approached a horse (a pet of his) crawled on all fours under the beast, and then struggled to his feet carrying the weight of the horse on his shoulders. That shows you how strong he was. Well, a few minutes later we were going down an aisle alongside a lot of wagon-cages, and he cautioned me to keep my distance for fear some fretful beast would "reach for me."

Finally he stopped in front of a cage containing a couple of lionesses, grinned and said "You probably think I am pretty strong, but I am a weakling compared to these ladies. Watch this."

Picking up a rake-handle, he grasped one end in both his mighty hands, and poked the other end through the bars and along the floor of the cage. He spread his feet apart and braced himself. One of the lionesses walked up to the stick, sniffed at it, put one fore-paw on it, gave her leg a backward sweep and literally tore the stick out of the strong-man's hands. Mind you! he was braced and ready. The lioness could not grip the stick, but merely pressed her paw down on it. The man said that if he had not let go he would have been pulled up against the cage bars with a smash that would have split his skull. He invited me to try and hold the stick. I told him that I was not ready to leave this world.

Some of our Western cow-boys can throw a steer by grasping its horns and twisting its head sideways—"Bulldog-



Although a leopard is no taller than a fair-sized dog, he is several times stronger. Study this picture and see if you can detect the huge "upper arm," which lies under the skin of the trunk.

ging," they call it. A puma attacks a steer by first jumping on its back and then placing one of its fore-paws on one of the steer's horns, while with the other fore-paw it grabs the beast's nose. Then the puma gives a mighty twist, and breaks the steer's neck. The African lions are said to employ the same method in killing the huge Cape buffalo.

South African hunters tell many stories concerning the amazing strength of the "King of Beasts." It seems that while traveling on the veldt it was formerly necessary to protect the draft-animals by night. The usual custom was to cut dozens of high thorn-bushes, and build a circular corral around the cattle. When the thorn bushes were piled six feet thick and six feet high, no animal could force its way through, except that living battle-ship, the rhinoceros. There are cases on record

where a lion has leaped the barrier, beaten down an ox with a single blow, seized the victim's neck in his jaws, flung its body over his back, and leaped out again over the barrier. It takes *some* strength to clear a six-foot barrier when you have half a ton on your back, but then the lion is a mighty beast—and a very much bigger one than most of us suppose. The picture on page 45 will give you an idea both of a lion's size, and of his tremendously muscular body.

HORSES VERSUS MULES

The greatest strength of horses is expended when the movement of the animal is directly forwards. A horse is at a disadvantage and cannot exert much power when he has to move sideways or backwards. A horse can deliver a terrific blow with his fore-foot, but his principal power is in his hind legs. At that, a mule is stronger than a horse. The mule cannot only kick harder, but he can draw heavier loads.

This was for a long time the subject of dispute, but whenever a test has been made the mule has shown his superiority. A few years ago in Missouri there was a match between a draft-horse weighing 1800 pounds, and a mule weighing 1500 pounds. The two animals were hitched back to back, a chain about ten feet long connecting the two single-trees. The animals were started up very gradually, so that neither of them could "get the jump" on the other. After a very short struggle the mule got the advantage and galloped away, dragging his prostrate opponent after him.

So far as I know, it has never been decided whether a pair of mules can out-pull a pair of oxen of the same weight. Some authorities claim that the oxen would win because their split hooves would afford them a greater purchase of the ground.

THE MIGHTY ELEPHANT

I have never been very much impressed with the strength of elephants,



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Elephants are strong on account of their size and bulk. We doubt whether this log weighs as much as the elephant does.

because the elephant is such a heavy beast himself that the mere application of his weight is enough to move any object of ordinary size. I have heard stories of elephants pushing heavy automobiles out of the mire when the trucks had sunk axle deep, but then a good sized elephant will weigh nearly half as much as the average truck, even when it is loaded. I have seen a picture of an elephant pushing a loaded freight car along the track, and the method the beast employed was to lean his forehead against the rear of the car, and simply walk. For that matter, I have seen a picture of Louis Cyr, the Canadian Hercules, propelling a freight car single-handed, and I believe that a good team of horses or mules could drag a heavy car for a few feet. I would be interested to know the horse power of the average elephant; that is, whether he would be able to out-pull four horses, six horses, or what his limit would be.

An elephant's neck is so short and thick that he is able to carry easily tremendous loads on his tusks or in his coiled trunk. In the picture on page 48, the elephant probably weighs five thousand pounds, and I doubt whether the piece of timber weighs much more, if as much. It is said that an elephant can coil his trunk around the body of a full grown tiger, and then swing his trunk aloft and hurl the big cat fifteen or twenty yards away, but as the elephant is at least eight times as heavy as



The only way to gauge a bear's size is to make him stand up. A really big Alaska grizzly weighs three-quarters of a ton, and is nearly nine feet tall when on his hind legs.

the tiger, that does not seem to indicate such tremendous strength on the elephant's part. In one of our Eastern Zoological Gardens, an elephant and a huge buffalo bull were penned in adjoining enclosures. The elephant had a trick of leaning his side against the woven wire partition, and whenever the buffalo would see his neighbor in that position he would make a sharp dash, and charge full tilt against the flank of the elephant. The larger beast did not seem to resent such attacks for a while,

(Continued on page 70)

Can a Man Come Back?

By Charles W. Paddock

THAT question has been asked countless men, countless times. Whenever in the history of athletics a champion has rested on his laurels for any length of time, people have commenced to wonder whether he was still champion. Whenever a man has won and lost the highest place that may be attained in his particular branch of competition, and then later strives to rewin

his former position, that age old question has been put.

Having asked the question, in the title of the article, the attempt will be made to answer it. Being allowed 2,500 words of space, however, the answer will be delayed until the final paragraph, for by that time both you and I may have a change of feeling toward the question itself. Perhaps some of the illustrated pictures, familiar enough to the students of sport, will help in the final decision rendered upon this interesting problem.

First come with me to Reno, upon a hot Fourth of July day, and take a ringside seat, and observe the two gladiators awaiting the clang of the bell that announces the first round of the "Battle of the Century." In one corner is the champion. His powerful body denotes strength and physical development such as few men have ever enjoyed. His great sinewy arms, like tree trunks, hang heavily to his sides. His firm hard jaw is set in determination, and his great head bespeaks courage and daring. His name is Jim Jefferies and the laurel wreath as heavyweight champion of the world has long reposed solidly upon his brow.

In the other corner, sits smiling, a giant black. Panther-like are his movements, and his muscles ripple under his ebony skin in smooth waves of strength. About him is the touch of youth, about him the air of a man at the pinnacle of his power. Now he laughs at the champion, laughs full in his face, confident in his heart that the idol cannot come back.

The bell sounds! The men meet in the center of the canvas circle, while ten thousand pairs of eyes follow their



MORRIS KIRKSEY

© Keystone

every move. Jefferies moves slowly, his hands held up as of old, his body crouched forward, as of old, ready to jab and strike, as of old. But the round is not finished ere the wise ones know that the conqueror of the champion is in the ring. For the confidence and the strength of youth is there, and before it the strength of age is battering in vain. Only the hull of the frame is the same; only the shell of Jefferies stands fighting there. He looks the same. He carries himself the same; but the power is gone. His arms seem more like tree trunks than ever now, leaden tree trunks, that he cannot wield. Jefferies goes to his corner. Hope is in his eye; but despair is in his heart. The speed and stamina is no longer in him.

So the end came in the fifteenth round. Marvel and wonder of it was that he could last so long. Nerve and will; strength and determination had held him together round after round. But twice he went down in the fifteenth, game but crushed. A new champion had been crowned, a panther-like black man, to rule in his stead. For the idol could not come back!

Away back in 1907, the three Musketeers of Track first commenced to win National and International fame with the weights. Patrick MacDonald, Paddy Ryan and Mat McGrath displaced those old heroes who had reigned so long, Martin Sheridan, J. S. Mitchell and J. J. Flanagan.

These three Irishmen have been the bulwark of American Olympic and International track teams ever since that day. None of the three keep themselves down



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PAT. MacDONALD

to weight. In fact, they are, everyone of them, men-mountains with ponderous limbs, huge shoulders, chests and stomachs, who depend upon sheer strength and weight, combined with a keen knowledge of their events, to win for them. And seldom does their system fail. If one falls behind in one meet, his brothers-in-arms can easily take his place, and conquer all comers. Each has a speci-

alty, however. Patrick MacDonald would rather throw the shot; Mat McGrath is best at the 56 pound weight; while Paddy Ryan is the greatest hammer thrower who ever lived. All three can wield the 56 pound weight with superhuman results, and McGrath is second only to Ryan in the hammer.

What a trio they make! They have stood together and seen generation after generation of runners rise and fall. They have competed against stalwart youths, who have deserted the game, married and raised sons, who also have been defeated by them. Twenty years and more these giants have held sway on American tracks, for long before their National Championship victories in '07, they were competing with success in New York. *S p e e d ?*

Smaller men than they may need it in throwing the shot and flinging the hammer. But weight is enough for the Musketeers. For together their total is more than 800 pounds, and Mac Donald alone tips the scales above the 300 pound mark. Weight, that is all. That and the power and strength of their good right arms.

S t a m i n a ?
Jumpers and runners may need it for success. But not they. Men with greater

stamina, perhaps have competed against them. But they too fell, because they did not have strength, such as theirs.

Yes, they have been beaten. Why, in the hammer throw, Lee Talbot defeated McGrath in 1909, and Walsh won from Ryan and McGrath in 1911. Since that time however, Ryan and McGrath have managed to keep the victory between them very nicely, Ryan capturing first place every year in the National Championships and in the Olympics, except two years when McGrath came through for the initial honors. For more than a decade now, no one has broken up their combination. Lee Talbot, who was not such a poor man himself, did happen to win the 56 pound weight in 1915, but the Musketeers have managed to keep all the other first places

since 1910 in this event amongst themselves. But always the Irishmen have come back as strong or stronger than ever, and America is counting upon them for the Olympics of '24.

The length of their competition is not dependent upon their strength, but rather hinges on the power of their legs. As the veterans have grown older and heavier, their ponderous weight has been supported by legs that



PAT. RYAN and MATT. McGRATH

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were not so large in proportion to the rest of their bodies, so that now, they feel a weakness from time to time in their limbs. But the Musketeers are good for a long time yet.

These genial Irishmen, kind hearted as the day is long, enjoy their fun at the expense of those stars who live for a day, and then pass on. Even such a running ace as Ted Meredith, these three can poke fun at. The great Ted first rose to fame as a high school middle distance star in 1911 and he made the Olympic team and captured both the 400 and 800 meters, an incredible performance, for a youth. Then he returned to America and for four years he carried the colors of Pennsylvania University to victory and to glory in his favorite events. He set records that have not yet been equalled and in all the history of track athletics, there probably never was a hero of the cinderpath so popular as he. His comeback in Harvard stadium, when he won his heat in the Olympic Tryouts of '20 was greeted with such acclamation and applause as seldom has met a champion, in any event, the world over. Meredith went overseas with the Olympic team. But that was all. The Ted of old was not the same. The veteran who had set the records for the rest of the world to strive for, saw his rivals fail to equal his marks, but he also saw them leave him far behind. Ted could not come back. His day had passed, his speed and stamina was gone and he had only his strength to rely upon and strength was not enough.

This has even proven the case with middle distance runners. They last but a short period and then fall by the way.



LOREN MURCHISON

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It is true that some are older than others when they attain their fame, and when they are in the height of their glory. It is true that Albert Hill, the Olympic Champion at present, for the 800 meters, and the 1,500 meters also, is more than thirty-five years of age. But Hill never commenced to be a star upon the track until he was almost thirty. He had always lived a vigorous life as a Yorkshire farmer and his greatest stamina and strength did not come to him until long past the customary period that young men reach their pinnacle or power.

In events, however, where speed is not such a prime factor as stamina, some stars have been champions for many seasons. The greatest example of a runner of this type is, no doubt, the marvelous Finn, Hans Kolehmainen, who was a famous athlete, before ever he visited this country in 1912, after the Olympic Games in which he had won the 5,000 meters, the 10,000 meters and the Cross Country all in the same week from the greatest runners in the world. In America Hans won the five mile race his first season here, and thereafter finished first in the ten mile run for four consecutive years. After

that he was engrossed in business and occasionally got out to set a record, but did not do any more intensive competition until 1920, when he easily won the Marathon at the Olympics in Antwerp, breaking the world record for the event. They said that he would not come back, but he laughed at his critics and proved them wrong. Last year he set some new world records for distance running in Finland and already has mapped out a course of record breaking attempts for this year. He will, undoubtedly, live up to his ambitions again, and might even win the Marathon in the Olympics of '24. Because Hans is always in condition. He lives the right kind of life and he knows how to preserve his stamina. He also happens to be a vegetarian.



Hans Kolehmainen, the Marvelous Finn.

What of sprinters, you ask? Can they come back? And judging from the history of the dash artists throughout American Athletic achievements, it is not a hard question to answer. Commencing with Charley Parsons, perhaps the very first sprinter of note on the Pacific Coast, we find that he went east for the National Championships in 1905 and won the 100 yards in $9 \frac{4}{5}$ seconds, as fast as ever the distance had been run to that time, in the Championships, and he captured the Junior hundred as well in 10 seconds which was also as fast as that distance had ever been run in the Championships. But the following season Parsons, who had been the greatest of stars for several seasons, was a changed sprinter and many champions and near-champions could have defeated him. All this happened within the space of one year.

Alva Meyer, holder still of the world record for 60 yards at $6 \frac{2}{5}$ seconds along with a number of other great sprinters, and a point winner in the Olympics of '12 and the 220 National Champion that same year, came out a few seasons later and high school runners ran away from him. In his best days, it seemed impossible that anyone should ever get away even with him from the gun, and yet even a few months after this many men were beating him away.

Howard Drew lasted longer than most sprinters and commenced to win fame in high school days in the East, by twice capturing the National 100 yards and going to Stockholm with the Olympic team. By going West into the warm Southern California climate he prolonged his running life somewhat, and ran the 100 in $9 \frac{3}{5}$ seconds, the world record for the distance. But he was through before '15 as the championships at San Francisco

(Continued on page 76)



BOXING

Prepared by William J. Herrmann

of Herrmann's Institute of Physical Training, Boxing, Fencing, Wrestling and Self-defense, of Philadelphia

LESSON THREE

(Continued from March issue)

SNAPPING AWAY

Don't confuse "back-stepping" with "snapping away" from a punch. In snapping away in order to pull away from a punch, you practically do not use your feet at all in order to take your head out of danger. In snapping away the blow coming your way is avoided by quickly bending your body backward from the hips just far enough to take your head out of reach of the punch.

Do not snap-back too far nor drop your hands, or you may put yourself in a bad position or even lose your balance. Snap-back just far enough to take your head out of danger so as to be able to instantly follow it up by stepping in and hitting your opponent ere he can recover. Be sure you always snap-away in good form and style, for should you unfortunately lose your balance or get into a bad position, you would be exposed to a telling punch by an opponent who took advantage of your error by quickly following you up.

Sometimes both methods of pulling away from a punch are more or less performed in a sort of half-back-step and half snap-away in one combined movement. Although snapping-back is not a form of foot-work, it is purposely described here in order to avoid the possibility of the novice confusing it with back-stepping.

Also don't confuse the "back-step" with the "retreat step." In a back-step you

practically use the rear foot only, whereas in a retreat step you move both feet in quick succession to the rear. In retreating the right foot moves first, followed instantly with the left in order to maintain the same relative distance between your feet and still be in good position just out of reach of the punch that was coming your way.

Irrespective of the different tactical reasons that govern the various uses of a retreat step, both feet should always move in quick succession to the rear when retreating, the right foot moving first followed instantly by the left. However, in getting away after a lead-off, or in breaking ground from a guard position, a different action of the feet is adopted. In breaking ground in order to get well out of hitting distance, you usually spring or leap back off both feet at the same time, in order to place a wider separating distance between your opponent and yourself than that usually cleared by the average length retreat step.

Should your right foot be raised from the ground in making a long lead off with your left at head, then break ground as follows: As you place your right foot down again and your body weight is transferred to it from the left leg, spring backward. The left foot should touch the floor first, alighting on the same spot formerly covered by the right, which then assumes its proper position in the rear.

For blows in which the right foot is not raised from the ground at the moment of striking, the movements in

breaking ground are precisely the same, for the moment your weight falls on your right leg, spring back out of distance as described.

In breaking ground when "on guard" press suddenly with your toes against the floor and spring back quickly, alighting some distance to the rear of your original "on guard" position, doubling as a rule the distance usually cleared by the average length retreat step.

In the event of breaking ground to avoid a rush, directly your weight is transferred to your right foot from the left, spring backward. The left foot should touch the floor first, alighting on or about the same spot just occupied by the right, both feet landing in their proper position, with the left foot forward.

Practice this so you can, if necessary, spring back several times in succession without stopping so as to enable you to put plenty of distance between yourself and your opponent, should combat conditions warrant it.

Except in rare instances both feet should not be off the floor at the same time while in hitting distance. You may at times be obliged to spring back in order to avoid a sudden rush, but bear in mind, should you happen to be hit at the moment both feet are off the floor, the chances are your opponent will floor you.

In breaking ground to the right, you work both backward and to your right at the same time. In breaking ground to the left, you work both backward and to your left at the same time. Be sure you always land in a good position with your left foot in advance of the right and the proper separating distance between your heels.

At first breaking ground is a little more difficult to properly do than merely retreating. Nevertheless, practice both taking and breaking ground in every direction until perfected. Like any form of foot work it must be done both quickly and well to be effective, for when you need it you need it badly.

TAKING GROUND

In taking ground either to the right or to the left, the left foot usually moves first, but not always. Which foot moves first depends not only upon your opponent's position, as well as your own, but also upon which foot bears the most of your body weight at the moment.

All other conditions being equal, the principle of using that foot first on which the least body weight rests at the moment, obviously makes for a quicker, safer and more efficient method of using your feet in taking ground.

TO TAKE GROUND TO THE RIGHT

To take ground to the right, move the left foot about a foot or so towards the right side, immediately following the action of the left foot by moving the right foot in order to again resume your "on guard" position.

Should your body weight at the moment be more on your left foot than on your right, then move the right foot first in taking ground to the right.

TO TAKE GROUND TO THE LEFT

To take ground to the left, move your right foot to the left and then follow with your left, placing the left foot in its proper position in front of the right.

Should your body weight at the moment be more on your right foot than on your left, then move the left foot first in taking ground to the left.

By adopting these steps in taking ground you keep in good position. Be sure you always keep your eyes on your man and never drop your hands. Don't lose good position of arms, feet, legs and body in making quick changes of ground. Always be well poised and in readiness to attack or defend as may be necessary.

SIDE-STEPPING

Side-stepping is one of the most spectacular forms of footwork in boxing. It also plays an important part in effective ring generalship. It is not

only used to avoid a blow, but also to take up a new position, get out of danger, move to better ground, as well as to place your opponent in less favorable light and position if boxing outside of a ring, in a street brawl, hold up, or fracas. It is especially useful in avoiding a rush, particularly against a heavier opponent, as well as a most effective means of getting out of a tight fix if cornered or forced back near the ropes. If you can do it well, it will also save you much worry, beside giving you a little chance to regain your wind, if blown, for after a successful side-step you can generally catch a momentary respite before your man is ready and in position again to face you.

Old school methods usually taught side-stepping in its simplest form and to the right side first. Throw the body weight suddenly on the ball of the left foot, turn your left heel outward and at right angles to your original position, at the same time turning your body to the right as you boldly rise and step sideways right, with your right foot alighting on the ball of your foot. Shifting your head to the right in combination with the action of your feet and body is an additional safe-guard against a possible hit on the face.

Now-a-days, a side-step right is

mostly performed by first quickly drawing the left foot back a little to the left of the right foot. This places your left foot in line with and about ten inches to the left of your right foot. The toes of the left foot should be pointed directly toward the right side, with the left heel off the floor and the left knee slightly bent. Bringing your left foot to this position is done at the same time and in combination with the combined move-

ments of your head and body. Simultaneously with the preceding movement of head, body and left foot, face

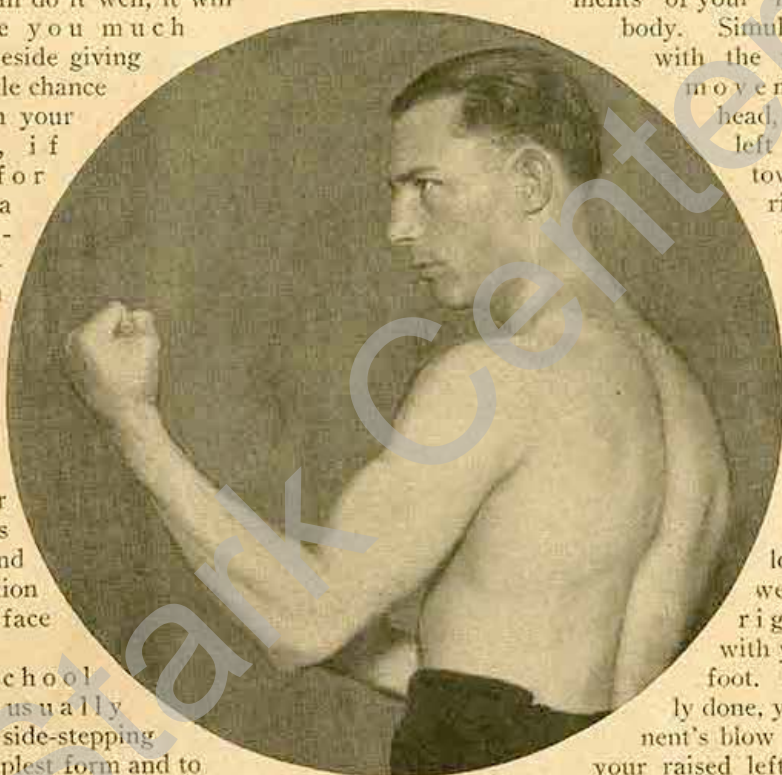
toward your right and push off the ball of your left foot by straightening the left knee as you take a quick long step well to your right side with your right foot. If properly done, your oppo-

nent's blow passes by your raised left shoulder as you step to the right.

You can either counter

as you sidestep or immediately after stepping out with your right foot, drawing your left foot after you and pivoting on the balls of both feet in order to again face your opponent. This places you in position to either take the aggressive or get safely out of distance as combat conditions may warrant.

Whether or not the action of the left foot is used in combination with the right as you start the side-step right, it



© International
Benny Leonard.

is usually accomplished by a quick and sudden movement of your feet, half spring, half step, turning your body to the right thereby changing momentarily the relative position of your legs, feet and body. Should your opponent at this stage of your side-step rush heedlessly by, he is apt to trip over your left leg.

Following the above rapid change of front, position and direction, put your left foot again in its proper place before the right as you pivot on the balls of your feet in order to again face your opponent. This puts you a pace to the right of and at right angles to your original position.

If properly executed you escape your opponent. You no longer will be on your opponent's front but at his side. In consequence, you can either get away easily if pressed too much at the ropes, or land a telling punch on your man, because a successful side-step will usually give you an opportunity to deliver a good hit to head or body with either hand.

A sudden side-step against a rush may also cause your opponent to lose his balance. Meeting with no resistance, he may topple over or pitch forward in his efforts to regain his balance.

In such a case quick action of your brains, feet and hands should enable you to complete his over-throw by delivering a telling hit with either hand ere he recovers.

As a rule it is advisable to side-step to your right side in preference to your left, for the reason that in moving to the left you are working towards your opponent's right hand and, in consequence, may run up against a well placed right hand punch.

Should there be insufficient space on your right side, then side-step to your left. However, don't resort to a side-step left, except in extreme emergency, or to avoid being forced into a corner or on to the ropes, or when using it against a right hand lead by an opponent who stands with his right foot forward.

Although it is more difficult to side-step to your left side than to your right, nevertheless, practice side-stepping to your left side as well as to your right in order to be able to side-step to either side should the occasion demand it.

In side-stepping to your left, slip your head to the left, at the same time turn your body directly to-



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Joe Lynch, World's Bantamweight Champion.

wards your left as you step to your left with your left foot, following instantly with your right and then placing the right foot in its proper position in back of the left, pivoting on the balls of your feet so as to again face your adversary. This puts you again "in position" so that your left foot is turned towards your opponent with your right foot in back of your left and your feet at right angles to the line originally occupied. Properly performed, you elude your opponent. Your opponent's blow passes by your right shoulder as you step to the left with your left foot.

Side-stepping to your left, as well as side stepping to your right, is mostly performed by first bringing your other foot more or less in line with the actual side-stepping foot. In side-stepping to the right, the left foot is usually slipped back a little to the left of the right foot and in line with it, just before the right foot steps to the right side, whereas in side-stepping to your left side, the right foot is usually slipped a little forward so as to get in line with your left foot just before the left foot steps to the left side. The preliminary quick in line movement of the opposite foot in combination with the actual side-stepping foot makes for quicker, safer and more effective side-stepping.

At first practice side-stepping right quite slowly until you get all the moves correctly, then speed up your action, slipping the left foot back and to the left of the right foot before stepping out to the right with your right foot until you can do all in one quick movement in good form and style.

After you can side-step well to your right, then practice the side step to your left on precisely the same lines. Slowly at first until all the moves are made correctly, then speed up, slipping the right foot forward and to the right of the left foot, just before stepping out to the left side with your left foot until you can combine all in good form and style in one smart movement.

A combination of side-step and break-



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Kid McCoy, one of the cleverest men that ever wore a glove.

ing ground is also useful. Practice it as follows: Spring back as in breaking ground but alight in position as described in the first half of the side-step. Then bring your left foot into its proper position before the right. This combination of breaking ground and side-stepping enables you to work back and to the right at the same time. In this combination as well as in all forms of side-stepping be sure you always keep your eyes on your man and never drop your hands.

SIDE-SLIPPING

A variation of the side-step, useful at times when in close quarters, is what is
(Continued on page 78)

THE MAT

A new department replacing the old-fashioned editorial

Not a "question-box," nor a "readers' service," but a department where you can fight for your views, or where you can sit in the reserved seats, and watch your fellow readers "go to the mat" in defense of their convictions.

I AM constantly being asked if the famous lifter, Arthur Saxon, is still living. Frankly, I do not know.

Saxon, whose real name was Otto Henning, came from Leipzig, Germany. For ten years previous to the Great War he spent most of his time in England, where he was a tremendously popular favorite.

Up to July, 1914, I received English, French and German magazines devoted to lifting and wrestling, but publication of these magazines was suspended after the outbreak of hostilities, and it has been nine years since I have seen any news of Saxon.

At various times I have been told that Saxon was killed in the trenches; that a shell had carried off both his legs; that he is still living.

Whatever his fate, I still have a great admiration for Saxon's ability as a lifter, and I wonder whether any of you can enlighten the rest of us concerning the fate of this remarkable man.

Here is a queer one. I have heard the idea before, but I never went into it as deeply as Mr. Carruthers has:

Denver, Colo.

EDITORS OF STRENGTH:

Will you please tell me, if, in your opinion, a bow-legged man is stronger than a man whose legs are straight? In some books I have read descriptions like this, "He was of middle height, with immensely broad shoulders, and has the slightly outward-bowed legs that are the invariable sign of immense natural strength."

I can name you at least three authors, (close observers, all of them!) who thus describe a very muscular man. I have been keeping my eyes open and have convinced myself that bow-legs are a sign of strength. Not, of course, when the legs are markedly curved, but when there is a slight, but noticeable bow; where, for instance, the knees cannot be brought within two inches of each other when the feet are parallel and touching.

I know that "knock-kneed" people are al-

most always "weak on their pins." There is no such thing as a knock-kneed athlete.

On the other hand (or foot), I have found that many very strong laborers are slightly bow-legged, but have not been able to determine whether they just "grew that way" or whether their legs have assumed an outward curve from constant lifting or carrying of heavy loads.

After reading Mr. J. Leonard Mason's article on "flat-foot," I believe I found the explanation. He says that to strengthen the feet (and the legs) you must walk on the outside edges of the feet. Now, a bow-legged man almost always walks just that way, whereas the knock-kneed fellow always walks on the inside edges of the feet and is thus constantly weakening his props.

Another thing is, that the bow-legged man usually stands with his feet far apart and is better braced for lifting or wrestling or carrying.

Yours truly,

JAMES CARRUTHERS.

At this writing I cannot recall even one bow-legged individual among the best lifters and wrestlers of my personal acquaintance, although, like you, I have seen such references in fiction.

For instance, Harry Gow, the "bandy-legged smith," in *The Fair Maid of Perth*. Also, if I am not mistaken, Marion Crawford had a "strong man" character of that type in one of his books; and Crawford was a judge of "strong men," and extremely strong himself. The latest case I have noticed was the Herculean Indian in James Oliver Curwood's "Flaming Forest."

But I can recall one case in modern athletics. A great—perhaps the very greatest—all-round athlete that this country ever produced, had a noticeable outward curve to his legs, and surely those legs were the most capable in athletic history.

He was so great an athlete that when, with an American team in England, he offered to compete single-handed against England's champions in ten different

PILLS NEVER MADE MUSCLES

Wishing Never Brought Strength

NO one can paste muscles onto your arms and shoulders. If you wish a strong, healthy body, you must work for it. And if you don't have one, you are doomed to a life of misery.

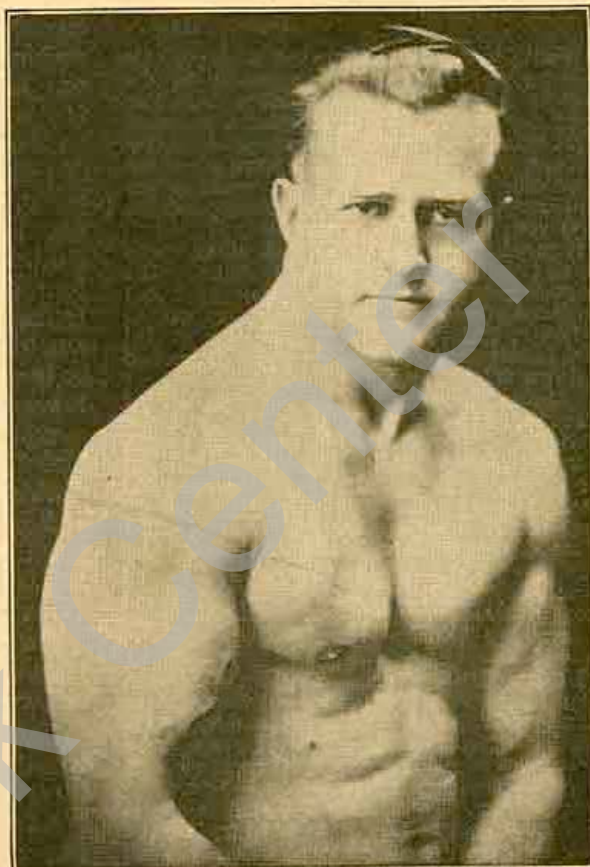
Modern science has taught us that we must keep our bodies physically fit or our mental powers will soon exhaust themselves. That is why the successful business man resorts to golf and other active pastimes.

Examine Yourself

Do you have the strong, robust body which keeps you *fit* at all times to tackle the daily tasks confronting you—always looking for bigger things to do? Do you jump out of bed in the morning full of pep; with a keen appetite and a longing to enter the day's activities? Do you finish your daily tasks still thrilling with pep and vitality? Or do you arise only half awake and go through a languid day?

PEP UP!

Don't let it get you, fellows. Come on out of that shell and make a real *he* man of yourself. Build out those skinny arms and that flat chest. Let me put some real pep in your old backbone and put an armor plate of muscle on you that will make you actually thrill with ambition. I can do it. I guarantee to do it. I will put one full inch on your arm in just 30 days and from then on, just watch 'em grow. This is no idle boast. It's the real works. A genuine guarantee. Come on now. Get on the job and make me prove it.



EARLE E. LIEDERMAN as he is to-day

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IT IS FREE

This will show you some of my remarkable achievements. Sixty-four pages with dozens and dozens of full page photographs of myself and a number of my pupils. Read what *they* say about my system. Don't take my word for it. This book will be an impetus, an inspiration to every red-blooded man. All I ask is the price of wrapping and postage—10 cents. Remember, this does not obligate you in any way, so don't delay one minute. This may be the turning point in your life. Tear off the coupon and mail at once—now, while it is on your mind.

EARLE E. LIEDERMAN
Dept. 704 305 Broadway, New York City

EARLE E. LIEDERMAN,

Dept. 704, 305 Broadway, New York City.

Dear Sir: I enclose herewith 10c for which you are to send me, without any obligation on my part whatever, a copy of your latest book, "Muscular Development." (Please write or print plainly.)

Name

Street

City State

events—all the way from sprinting to shot-putting—and guaranteed that he would win in at least seven events.

Here is one from a "Hiker"

Boston, Mass.

Would you mind telling me why you are opposed (or seem to be opposed) to the practice of walking several miles each and every day? When I told you that I averaged eight miles a day you told me to cut down the amount, and I know that you have given the same advice to several other walking enthusiasts who have been in correspondence with you.

Now why shouldn't a man walk all he wants to, and walk as far as he can? In an article in your magazine Mr. Ralph Hale said that Englishmen had fine legs because they walked so much, and in your last letter you quoted Mr. Jowett as saying that as a boy he walked a dozen miles a day.

I am an enthusiastic hiker, and I think that there is no other exercise that benefits one as much as walking. Dan Weston's case proves that a continued practice of walking will bring an individual to a healthy and vigorous old age. It seems to me that all the great walkers have been long-lived. I know a lawyer of 65 years of age who has kept an account, and says that he has walked 150,000 miles since he was 15 years old, and that figures out at the rate of 3,000 miles a year, or nearly ten miles a day. He looks as vigorous as the average man of 50.

I think that long-distance walking and running create more endurance than any other forms of bodily activity, and I cannot understand why some modern trainers seem to be so opposed to road work. It seems to me that there is a tendency among trainers to "coddle" their charges. I understand that if a candidate announces that he is going to try for the mile run, the trainer has him jog two or three miles a couple of times a week, and run three-quarters of a mile at a smart pace once a week; and if that is the case, I can understand why we produce so few good distance-men in this country.

There was an Englishman by the name of W. H. George who ran a mile in 4 minutes 12¾ seconds, and that stood as a record for about thirty years. Mr. George used to run anywhere from 50 to 75 miles a week in practice, and he said that he had run so many five-mile and ten-mile races, that a one-mile contest was a mere breather for him. Would you mind explaining your attitude about walking?

CHARLES EMERY.

I am not as opposed to walking as Mr. Emery seems to think. There is nothing that will replace road-work in a training program. Walking and running develop muscles of progression which are left practically untouched by most indoor exercises. I think that no matter whether

a man has some favorite sport through which he gets his exercise, or whether he practices some indoor system, he should take a brisk walk of three or four miles at least three times a week. I have frequently advised people against too much walking, and I have my reasons for doing so. In the first place, the time required. If you walk eight miles a day it will take up about 2½ hours of your time, and few of us have that much time to spare. Secondly, I believe that walking must be done in a certain manner in order to yield much benefit. A man can walk three or four miles in good style and finish up feeling fresh and invigorated, but if he sets himself a stint of eight or ten miles he is apt to plod along in "any old way" towards the end of the route. You remember the song about the last long mile. Thirdly, I believe that when a man is working on a definite program to develop and invigorate his body he spends so much energy in long walks that he actually retards the upbuilding progress. What is the good of taking very long walks and finishing up so tired that you have no pep left for your other sports, or for your daily work?

I admit that it is all a matter of individual preference, but if a man has two spare hours a day for exercise I think that he can get better results by walking for, say, three-quarters of an hour and spending another 30 or 45 minutes in exercises that develop every part of the body, whether it is rowing, wrestling, "gym" work, or some indoor drill. He still has half an hour left for his bath and rub-down.

You make no mistake, Mr. Emery, in saying that most habitual walkers retain their vigor to an advanced age.

* * * *

I hope you will all read Mr. Paddock's article in this number. The ability of a man to "come back" is one of the most discussed questions in the athletic world. I cannot understand why Mr. Paddock, being a Californian, failed to speak of Mrs. May Sutton Bundy, May Sutton, as

(Continued on page 69)

HAVE YOU HAD YOUR EXERCISE TODAY?

If your aim is to obtain unusual vitality and endurance coupled with remarkable agility, you *must* give your body a certain amount of daily exercise. *Fifteen minutes every day*, exercising with a pair of *dumbbells*, will keep you in good condition and will give you the development you so earnestly wish for and cannot have.

If you begin to strengthen the voluntary muscles in your body you will also be strengthening the involuntary muscles, such as your heart, lungs, etc., by increasing the circulation of the blood and respiratory organs. Men and women who are constantly using their minds and bodies are destroying certain cells in their bodies which *must* be replaced. Vigorous exercise with *dumbbells* will tear down the weak and worn-out cells and tissues, and the blood (its circulation quickened by the exercise) will quickly replace the worn-out cells.

FIRM, HEALTHY MUSCLES—BROAD SHOULDERS—DEEP CHESTS

If every man and woman would practice a few simple exercises with a pair of dumbbells suited to their own physical condition, for fifteen minutes each day, they would greatly improve their physical and mental condition. Every doctor will tell you that the condition of the nervous system and the brain depends entirely upon healthful muscular activity. If the body does not get this muscular activity it cannot perform its functions properly and, in consequence, the entire system becomes inefficient. Daily exercises with a pair of dumbbells will produce *firm healthy muscles, a solid body, broad shoulders and a deep chest*. You will keep your body toned up and strong enough to be free from danger either of incurring serious disease or any lighter ailments.

HEALTH GOES HAND IN HAND WITH SUCCESS AND THE COURAGE TO DO THINGS

The effect of dumbbells exercises on a tired-out system is remarkable. Do you hope to be successful when you are constantly tired and over-worked and when your body does not have proper attention? You cannot! Make it a habit to exercise every day and see how you will add life and energy to every muscle, every vital organ and every body cell—to your entire body. After all, your health is the most precious possession you have, and through it you either obtain or lose success and happiness.

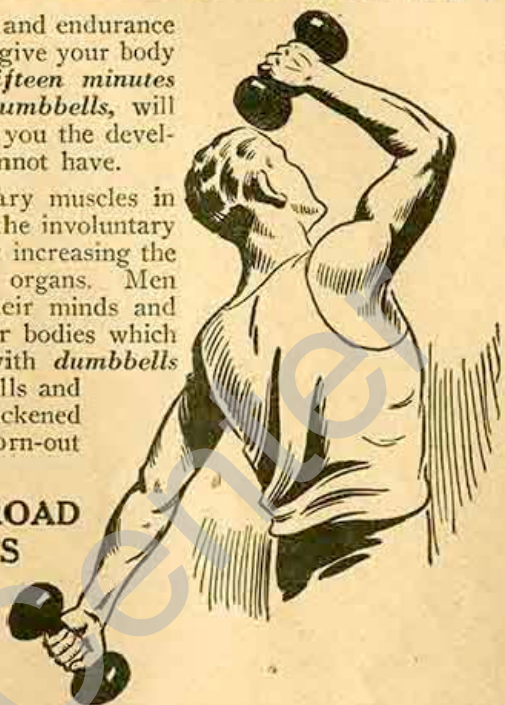
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Rupture—Its Cause, Prevention and Cure

(Continued from page 35)

These functional derangements can easily be cured either by wearing a truss constantly, or undergoing a radical operation. Anorexia (loss of appetite) occurs in one who suffers with rupture unless the rupture is properly treated and if the rupture be neglected for a long time the result may be an ulcer of the stomach; this being a very serious condition, often requiring a surgical operation in order to cure the patient. The symptoms caused in other parts of the body by a rupture, producing a faulty posture, vary according to the character and extent of the rupture. It is self-evident that a very small rupture is not so liable to cause grave symptoms as a large one. In many instances, those who are ruptured, and do not have it treated, soon learn that they easily become tired, are irritable, pale, nervous and indisposed, which is due to a faulty posture, primarily produced by the rupture. A most annoying condition produced by an untreated rupture is a constant backache; this is because the muscles in the back are constantly stretched, the rupture causing the patient to contract his abdominal muscles and in turn this causes round shoulders which in turn diminish the pulmonary capacity, and thus interfere with the heart and lungs. When the body is not in a state of perfect muscle balance, the muscles not so balanced become weak and if these muscles comprise those confined to the abdomen, one can readily understand that rupture is more likely to occur than when perfect balance, or development exists. The following is an explanation of perfect muscle balance: The shoulder blades should lie properly

against the chest and the shoulders held back without muscular strain. The spinal curves should be slightly convex in the dorsal region and concave in the lumbar region. The abdomen should be somewhat flattened and held up by the abdominal muscles. All of the muscles of the abdomen, chest, neck, shoulders and back should be in slight contraction without strain or effort. By remembering the above posture with careful, general, muscular development, there is little danger of any one becoming ruptured if he will carefully bear in mind the preceding parts of this article. Some general considerations in order to prevent rupture may not be amiss. Exercises followed, that will develop a symmetrical body greatly strengthen those of the abdomen where rupture occurs, by increasing the general muscular strength of the individual, and in this way giving greater resistive power to the abdominal muscles; moreover the circulatory system is greatly benefited and from this the abdominal muscles receive a better and purer blood supply, thus producing a tonic effect, not received when the muscles are not well developed, and a poor or inadequate blood supply circulates through them. In order to give tone to the skin covering the abdominal muscles, it is well to rub them after exercising, with a proper rubbing fluid, and I do not know of any better one than witch hazel or alcohol. These give excellent tone to the skin and the former is comparatively inexpensive, and easily procured. A proper bath should always be taken after exercises that develop the abdominal muscles and a good rub should always follow.

FREE TO THE RUPTURED

5,000 Sufferers to Get Free Trial Plapao

No Need To Go Through Life Wearing a Useless Truss

This generous offer is made by the inventor of a wonderful "all-day-and-night" working method which is to be used to tone up and strengthen the relaxed muscles, thereafter doing away with painful trusses altogether, and the necessity for dangerous operations.

NOTHING TO PAY

To the extent of 5,000 sufferers who write—Mr. Stuart will send a sufficient quantity of the Plapao, without charge to enable you to give it a thorough test. You pay nothing for this trial of Plapao, now or ever.

STOP USING A TRUSS

Yes, stop it, you know by your own experience, it is only a makeshift, a false prop against a collapsing wall, and that it is undermining your health because it tends to retard the circulation of the blood. Why, then, continue to wear it? Here is a better way, which you can now prove for yourself, free of charge.

USED FOR A DOUBLE PURPOSE

First: The primary and most important object of the PLAPAO-PADS is to keep constantly applied to the relaxed muscles the medication called Plapao, which is contractive in nature, and taken together with the ingredients in the medicated mass is intended to increase the circulation of the blood, thus revivifying the muscles and restoring them to their normal strength and elasticity. Then, and not until then, can you expect the rupture to disappear.

Second: Being made self-adhesive, purposely to prevent the pad from shifting, they have therefore proven to be an important adjunct in retaining rupture that cannot be held by a truss.

Hundreds of people, old and young, have gone before officers qualified to acknowledge oaths, and swore that the PLAPAO-PADS cured their ruptures—some of them most aggravated cases—and of long standing.

CONTINUOUS NIGHT-AND-DAY ACTION

A striking feature of the Plapao-Pad treatment is the comparatively short time it takes to get results.

This is because the action is continuous—night and day, throughout the whole of the 24 hours.

There is no inconvenience, no discomfort, no pain. Yet minute after minute—whilst you are going about your daily duties—even whilst you are sleeping—this wonderful remedy is invisibly infusing the abdominal muscles with the new life and strength they require to perform their rightful function of keeping the bowels in place without the artificial support of a truss or device of any kind.

THE PLAPAO-PAD EXPLAINED

The principle upon which the Plapao-Pad works can be easily figured out by noting the accompanying illustration, and reading the following explanation.

The PLAPAO-PAD is made of a strong flexible material "E" which is designed to conform to the movements of the body, and be perfectly comfortable to wear.

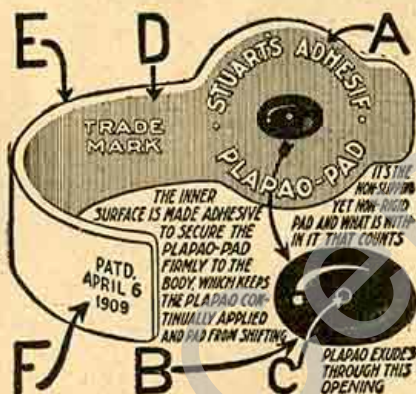
Its inside surface is adhesive (similar to, yet quite different from an adhesive plaster)—to prevent the Pad "B" from shifting and getting out of place.

"A" is the enlarged end of the PLAPAO-PAD, which overlies the atrophied and weakened muscles to keep them from giving away further.

"B" is the properly shaped Pad, to be applied in such a way that it blocks up the hernial orifice, and tends to prevent the contents of the abdomen from protruding.

Within the Pad is a reservoir. In this reservoir there is placed a wonderful absorbent astringent medication. As soon as this medication is warmed by the heat of the body it becomes soluble and escapes through the small opening marked "C" and is absorbed through the pores of the skin to strengthen the weakened muscles and effect a closure of the openings.

"F" is the long end of the PLAPAO-PAD which is to be plastered over the hipbone—a part of the framework of the body calculated to give the necessary solidity and support to the PLAPAO-PAD.



PROVE IT AT MY EXPENSE

I want to prove to you at my own expense that you can conquer your rupture.

When the weak muscles recover their strength and elasticity—

And the unsightly, painful, dangerous protrusions disappear—

And that horrible "dragging down" sensation is banished never to return—

And you recover your vigor, vitality, energy, strength—

And you look and feel better in every way and your friends remark about your improved appearance—

Then, you'll know your rupture is conquered—and you'll sincerely thank me for urging you so strongly to accept, NOW, this wonderful free trial.

SEND TODAY FOR FREE TRIAL

Make a personal test of its value. Send no money, for the Free Trial Plapao costs you nothing, yet it may bring you a Health Restoration more precious than much fine gold. Accept this free "Trial" today and you will be glad you took advantage of this opportunity as long as you live. Write a post card or fill out the coupon today, and by return mail you will receive the free trial Plapao, with a presentation copy of Mr. Stuart's 48 page book on Rupture, containing full information regarding the method which was awarded a diploma with Gold Medal at Rome, and a diploma with Grand Prix at Paris, which should be in the hands of every sufferer from this dreadful affliction. If you have some friend who is ruptured tell him about this great offer.

5,000 readers can obtain this free treatment. The response is certain to be enormous. To avoid disappointment write NOW.

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For Free Trial of Plapao and Mr. Stuart's Book on Rupture.

Name

Address

Return Mail will bring Free Trial Plapao

Ridding Yourself of Your Big Waist-Line

(Continued from page 32)

of the waist. In many cases you will find faint lines showing the margins of the rectus abdomini muscles. Those muscles in the trunk are shown in the statues even if the athlete depicted is supposed to be not in action, but at rest.

In most modern athletes, while the pectoral (or breast) muscles stand out distinctly, the abdominal and side muscles are rarely apparent.

When Sandow first came to America, our sculptors, artists and medical men were amazed at the prominence of his abdominal muscles. In all his front-view poses these muscles are apparent. Since Sandow's time the importance of these muscles has been generally recognized, and now many athletes spend just as much time in cultivating their waist muscles as in developing the more showy muscles of the arms and shoulders.

All seekers after bodily beauty and muscular development are aware that muscles come in pairs. The "biceps" bends the arm and the "triceps" straightens it. If a man devotes all his time to developing his biceps he is bound to develop a fair triceps at the same time. As the rectus abdomini muscles are opposed by the muscles which run along each side of the spine (erector spinae), it follows that if a man has prominent muscles along the front of the abdomen, it will be found that he has even more prominent muscles on the small of the back.

As I mentioned in my article on dancing (STRENGTH—December 1922) the muscles around the waist work in concert with the muscles of the thighs.

The muscles on the front of the thigh contract when the muscles on the front of the abdomen contract. The muscles on the outside of the thigh work with the muscles of the sides of the waist; and those on the back of the thigh work with the muscles on the small of the back.

For that reason when you find a man who like Sandow, had remarkable ab-

dominal muscles, he is sure to have finely developed muscles on the front of the thighs. If you have studied the pictures of the various weight lifters in this magazine, you must have noticed that those who specialize on the "bent press" have unusually large muscles at the sides of the waist and on the outside of the thigh.

Maximum development of the waist muscles cannot be acquired through simple exercises such as serve to reduce the girth of the fat man.

You simply *have* to work the thigh and waist muscles in combination. Such exercises should be practiced only by those who have already developed fairly strong abdominal muscles through the ordinary exercises.

The "sitting-up" exercise which is so difficult for the fat beginner is a mere matter of endurance to the trained athlete. I do not know the record, but I understand that if the ankles are securely held down it is possible for a fairly strong man to make several hundred repetitions of the "sit-up." And yet I have known a man who could "sit-up" one hundred times who failed utterly at the advanced test given in Figure 1 because he had not the supreme power which comes only when the thigh and hip muscles have been trained to act in concert.

Some athletes endeavor to get extra strength in the abdominal muscles by bending far backwards. Instead of lying on the floor they lie on a bench so that their buttocks are at one end and the ankles strapped near the middle of the bench. When they lower the body they let it go down until the head touches the floor. The exercise is unquestionably more difficult than the usual one, because one has to raise the body through a greater distance, but it *stretches* the muscles more than it develops them.

No! To get all the strength and development of which you are capable you

(Continued on page 68)

How to Double Your Efficiency

If you are not getting complete joy and profit out of life—if you are languid—if your future seems problematic—if you wonder why, but can't understand—

By Chas. G. Percival, M. D.

HERE is a message which has made over 600,000 men and women supremely happy. Here is the way they have regained spirit and vim, winning back their rightful places in business and society—greater prosperity, a youthful outlook and added pleasure.

This shows the way to perfect health. Not just being "well" or "never sick" (that's merely existing), but the thrill of being vibrantly ALIVE. Not tiring easily. Not being nervous. Not feeling all clogged up. Not disliking food. Not languid.

This remarkable story, though highly scientific, is told in plain words. For generations it has attracted the attention of the world's leading scientists.

Bodily overload brings nervous exhaustion. One becomes an easy prey to multitudinous ills. Yet all can be avoided if one gives a little time and thought to keeping fit.

The body is a machine. You are a human machine. Your machine, like a furnace, has to be stoked properly with the right food. But in both cases there is constant danger of clinkers.

In the human machine these "clinkers" are deadly germ "clots" or "colonies" which discharge a vicious poison. "Auto-intoxication" the scientists call it. "Constipation" is its ordinary misnaming.

Your colon gets all clogged—filled with "clinkers."

For temporary relief, people have been resorting to harsh laxatives and cathartics, many often drug-laden. It has not been a complete treatment. Often it has caused dangerous strain.

And that diffuses the poison and sends it into the system.

It is this seepage of poison from the colon into the tissues of the body that conflicts with the delicate brain and nerves and is responsible for that "all-gone feeling" and lack of initiative which robs men and women of their vitality.

Many of the most conspicuous ills resulting from auto-intoxication are headaches, indigestion, rheumatism, lumbago, neuralgia and sciatica. High blood pressure and hardening of the arteries, with the apoplexy that they help to produce, are largely due to the effects of colonic poisons.

Your colon, if the average length, is about five feet long. Now if you were living as a savage, your colon walls would undoubtedly be in perfect condition.

But modern living has created great havoc. In a recent autopsy at a great hospital it was found that out of 288 colons only 28 were in healthy condition.

YOU may be a "colonic," and not know it. You may lay your troubles to other causes, not knowing how to diagnose your case. Nervousness you may lay to worry, for instance, when in reality your nervousness comes from not being 100% healthy.

As Dr. Frank Crane has written: "A person may have the highest ideals, the purest aspirations, the noblest intentions; he may be a devotee of uplift literature, he may be earnest of spirit and yet wonder why gloom, depression and fear constantly assail him, and he often as not does not realize that his trials are due to a clogged colon."

Many of today's ills—also premature

age—are traceable directly to auto-intoxication. The greatest minds in the medical world have spent years solving the problem of preventing auto-intoxication.

And now, thanks to a learned physician who devoted his life to the study of auto-intoxication, there is a simple way to combat it. Remarkable results have been produced. Thousands upon thousands of people, many suffering almost fatal illnesses, have been restored to complete health, and new vitality.

The method is an internal bath. Possibly you have already heard of the famous "J. B. L. Cascade," the internal cleanser, the washer of the colon. It is the perfect and widely endorsed method of keeping the colon in healthy condition and ending the poisonous germs.

If you want to live your life at its best—if you want to keep your blood pure, your heart normal, your eyes clear, your complexion clean, your head keen, your blood pressure normal, your nerves relaxed—if you want to be able to enjoy the vigor of youth in your declining years, practice internal bathing. *And begin now.*

The morning after an internal bath! You've had a sound, refreshing sleep. You awake with renewed virility, you are confident, you are keen, you are

eager for the duties and problems of the new day, in short, you feel re-made.

Learn about the marvelous J. B. L. Cascade and how it has brought relief to over 600,000 people. Read what they say. Learn the symptoms of auto-intoxication and how you can double your efficiency.

All this is contained in a most interesting book entitled "Man Is Only 50 Per Cent Efficient," written by Dr. Chas. A. Tyrrell, the inventor of the J. B. L. Cascade, whose life, long study and research make him the pre-eminent authority. Not only did internal bathing save and prolong Dr. Tyrrell's own life, but the lives of multitudes of others. No other book has ever been written containing such a vast amount of practical information for the business man, the worker and the housewife. To obtain it, merely write to Tyrrell's Hygienic Institute, key West 65th Street, New York City, mentioning (name of magazine) and a copy will be sent to you free of all cost or obligation.

Don't be half-healthy. Don't let your happiness and that of others be marred unnecessarily. Don't yearn for success—attain it! It is unnatural to be half-efficient. It is needless to be ill.

But the first step is to acquaint yourself with internal bathing and what it does. It is so easy to send for the book describing it—a postcard will do.—*Adv.*

(Continued from page 66)

must do the exercise while you are supported from the knees, instead of being supported at the hips.

Take Figure 7. After the athlete has lowered the body until the head is hanging down it takes the combined action of the waist, hips and thigh muscles to bring his body up to a sitting position. The exercise is so strenuous that most athletes have to have an assistant help them to the seated position at the first few attempts.

Once the athlete becomes able to raise

his own bodily weight his gains in strength come with amazing rapidity, and frequently the man who had to be helped up on the first of the month can at the end of the month raise his own body and the weight of another man.

Various devices are used to perform the exercises. The Roman stool, the Roman chair (Fig. 1) and the Roman column (Fig. 2) are progressive stages of the same apparatus. The higher the feet are from the ground, the easier the exercise is. Sandow made a sensation

with his Roman column act. Spectators who were bored by his "putting-up" big dumb-bells and his supporting the weight of three horses, went wild over the strength displayed in the Roman column act.

Why all these things are called "Roman" I cannot tell you, for I will swear the Romans never heard of such things. Probably they wanted some name that sounded grand and noble on a theatre program. If you belong to a gymnasium you can do Roman column work without the column. Study the position of the athlete in Figure 4. Note that his calves are horizontal and that he is supported *under* the bend of the knee and that his feet are stuck under a cross-piece to give him a purchase.

When you get to your "gym" hoist yourself up on the parallel bars, work yourself around until you are sitting sideways, with one bar under the knees, and the other bar *over* your insteps. Now you are in the first position. Have some friend stand alongside and lower your body until you are in one horizontal line, from head to heels, as in Fig. 4. The chances are that you can hold yourself, but that you cannot raise yourself until your body is upright, while your thighs are still horizontal. That is what your friend is for. The minute he sees you weakening he must jump in and support your shoulders.

After a couple of days' practice you will be able to raise and lower the body as confidently as though you were sitting on a chair instead of sitting on air. After a week's practice you will be able to lower yourself until the body is hanging straight downwards, head towards the floor, and then raise yourself in one great sweep. And when you can do that you will be stronger than ever before in your life. I do not care what you *have* been before. You may have had very strong arms or immensely powerful legs, but until you do this Roman column work you have no idea of what real "bodily" strength means. It is a kind of power you can get in no other way.

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The Strength of Animals

(Continued from page 49)

but finally lost his temper, and when he heard the bull approaching he shifted his position to "head on," reached over the partition with his trunk, and caught the buffalo a swinging blow along the side of his shoulder, and the blow was so terrific that although it caught the buffalo in mid-air, it knocked him on his side several yards away.

By reason of his greater weight, the elephant has a marked advantage over any land animal, but on the other hand, he is not nearly as strong in proportion to his weight as are many of the smaller quadrupeds. In proportion to his size a wild-cat is far stronger than an elephant is.

GORILLAS, CHIMPANZEES, ETC.

It is almost impossible to gage the strength of the larger apes. As far as arm strength goes, a 50 pound chimpanzee can outdo the strongest of mankind I do not know whether apes are capable of carrying a great amount of weight on their backs or shoulders. The lower limbs of a gorilla and chimpanzee or an orang-outang are so short, and so comparatively puny, that these animals seem to have extreme difficulty in moving their weight along the ground, so it would not seem as though they would be able to carry any very heavy objects.

While hunters and explorers report fights and combats between different kinds of quadrupeds, there do not seem to be any records of fights between quadrupeds and the larger apes. It is known that leopards prey upon the smaller monkeys, but the African natives say that leopards will flee from the sight of a gorilla, and that even lions will give the gorilla a wide berth.

A chimpanzee is a comparatively small animal, but his arms are so long and his muscles of such high quality, that his strength is incredible. One of our zoos recently acquired a small chimpanzee which weighed maybe 40 pounds. As

the ape seemed lonely, the keeper gave it a large tom-cat for a playmate. The ape seemed delighted, but exhibited just as little judgment as a baby does when playing with a kitten. It picked the cat up by the tail, and subjected it to several other indignities. The cat naturally objected, and scratched its tormentor's face whereupon the chimpanzee lost its temper and with one hand it grasped the hind quarters of the unfortunate cat, and with the other paw grasped the cat's shoulders. Then it gave a quick tug, and pulled the cat *clean in two*; a thing which no man could do, even if he wanted to.

It would be very interesting if we could test the strength of a gorilla, but that is next to impossible, because there is no way in which we can induce a gorilla to put forth his full strength except by getting into personal combat with him. I have seen the statement that once, when a hunter ordered his dogs to charge upon a gorilla, the monster ape waited until the dogs were close to him and seized the leading hound, (which weighed about 50 pounds), and with a single motion of his arm, threw the beast 100 feet through the air. Upon seeing that, all the other dogs retreated and refused to go within reach of the formidable monster. It is well known that a gorilla can take a double-barreled gun in his hands and bend the barrels to right angles as easily as a man would bend a piece of thin wire. It is easy enough to test the strength of a domesticated animal, but no means have yet been devised of gaging the full power of a grizzly bear, a full-grown lion, or an adult male gorilla. A gorilla's strength seems fantastic when compared with the strength of a man, but it must be borne in mind that a gorilla has a chest and a pair of arms which would be an adequate equipment for a man eight feet tall and weighing 400 pounds.

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Tobacco Redeemer is in no sense a substitute for tobacco, but is a radical, efficient treatment. After finishing the treatment you have absolutely no desire to use tobacco again or to continue the use of the remedy. It helps to quiet the nerves, and will make you feel better in every way. If you really want to quit the tobacco habit—get rid of it so completely that when you see others using it, it will not awaken the slightest desire in you—you should at once begin a course of **Tobacco Redeemer** treatment for the habit.

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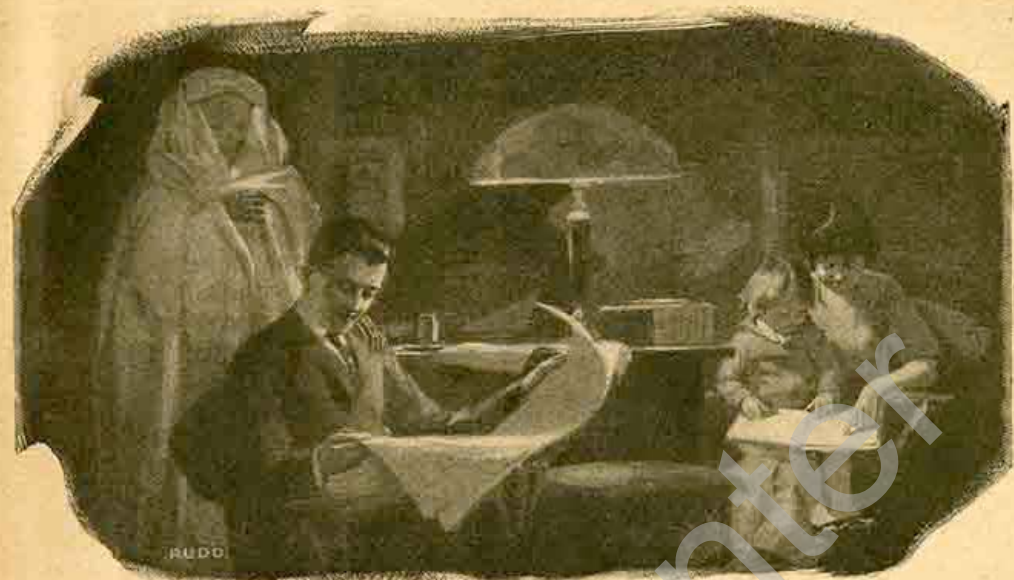
Why Horseback Riding Is Exercise

(Continued from page 18)

five to thirty miles. And that is not all dead, that spirit of endurance and tremendous physical power and stamina.

Recently an acquaintance came to the writer, downcast and beaten, with the information that he had tuberculosis and had been ordered to go to some region where the climate was beneficial. We cheered him up and asked him how he would like a job riding fence on a cattle ranch. He was licked, had never ridden horseback and knew nothing about cattle excepting in the form of steaks; but he was willing to try. We wrote a letter to a friend in the southwest, telling him all about it, and three weeks later our tubercular acquaintance was on his way to the land of the sage and alkali. That was something like seven months ago and two weeks past we had a letter from the dying man. He had been graduated from the lonely fence riding task to that of riding day herd and had gained forty-two pounds in weight. And that fence riding should have killed him. It is the most disliked job of all, ten hours a day in the saddle on a horse that probably never moved faster than a walk except when going to grub, riding around the edge of the fenced-in range to repair any breaks.

So much for the physical. Now for a few of the high spots. Did you ever watch a polo game without marveling at the nerve as well as the superb physical strength, the amazing sharpness of eye and wonderful co-ordination of the players? If so, think it over the next time you see one, and decide for yourself whether football or polo is the most strenuous. Try to convince yourself that those riders are not wonderful athletes in spite of the fact that very few of them do any other training than the horseback riding they indulge in. Glance over the statuesque form of Devereux Milburn, the greatest back of



The Invisible Menace

—Is Its Hand On Your Shoulder?

EVERY day in the year men and women apparently in good health are suddenly stricken with a fatal disease. Men and women who thought themselves in perfect condition are finding that, before a single symptom was noticed, Bright's Disease, Diabetes, or some other dreaded malady has gained a running start in their bodies. Some of these victims live for years—broken in health and spirit. Others die quickly. You are shocked at the suddenness of their passing.

Why is this tragedy so common? Why may it soon be true in your case? Simply because these diseases are as insidious and deadly as murder in the night. They approach secretly, stealthily. There are no evident symptoms—no outward signs. By the time noticeable symptoms develop it is too late; nothing can prevent a fatal ending. And the pity of it all is that ninety per cent of these cases could be prevented.

How To Learn The Facts

Medical science has perfected a simple yet infallible test. A test that shows the very first tendency to Bright's Disease or Diabetes. A test that shows their presence long before any outward symptoms are felt. A test that enables you to win the fight because you know the facts in ample time.

This test is the barometer of your health. It proves your strength or weakness. It is employed by hundreds of America's ablest executives—men who consider the facts about their health just as vital as the facts about their business.

The Biological Department of the Louis G. Robinson Laboratories makes a specialty of this class of work. For years it has been giving this service to the medical profession in Ohio and Kentucky, and now you yourself can secure this same service.

When you become a subscriber to the Robinson Health Service you will receive a complete report on your health every ninety days. These reports are written so that all can understand, and they give you the real hidden facts about your body and tell you exactly what to do about it. The work is done by expert chemists and biologists working under the supervision of a medical specialist.

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In addition, every report will carry with it suggestions as to simple modifications of diet—modifications that will not only prevent disease, but noticeably improve your general health and feelings.

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Good health is absolutely necessary for your success. Knowing the real facts and knowing them in time is the secret of good health. That is exactly what you get in the Robinson Health Service.

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them all and the man who has been an American internationalist for almost a generation. He has the bodily carriage of a gladiator despite the graying hair. And he rides like a stripling youth with the abandon of a Sioux. You would willingly offer an affidavit that he was born without nerves.

But you don't have to play polo to gain those qualities. There are other ways. Try a ten-mile cross-country ride every morning, taking everything as it comes, ditches, fences, creeks, rock piles and what-not. At the present time we are doing it within five miles of a big city in the East and there are quite as many thrills and a heap more hazards than you could find on any cattle range. If you don't agree that it steadies jaded nerves you are pretty far gone. A few weeks of it and you will be fairly well equipped and will not find it necessary to drive yourself to the table when somebody tugs the cord that rings the dinner bell.

The World's Greatest Gymnast

(Continued from page 42)

of seasons as the big sensational feature.

The higher class theatres were also very lucky in securing this extraordinary star artiste for their winter seasons.

All those who may have the opportunity should see Miss Leitzel perform these exceptional and phenomenal feats. The performance of this young lady alone is worth infinitely more than any price of admission charged.

The talents of Miss Leitzel do not stop at gymnastics; languages, music, and painting she has mastered to a remarkable degree. She speaks seven languages fluently and reads and writes four.

Music was taken up at a very early age, under the instruction of some of the very best European masters, at Paris, Milan, Vienna and Leipzig. She is especially talented in the higher class of music and plays a number of string instruments equally well.

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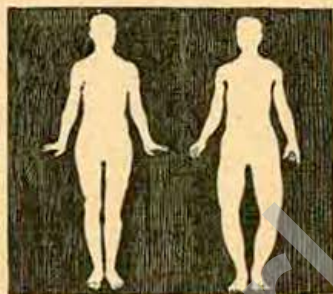
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Miss Leitzel showed a keen interest in painting at an early age and was encouraged by her mother, who gave her the opportunity of great advancement by remaining as long as possible in the European art centers and by employing the very best art instructors. Miss Leitzel was the youngest artiste to secure a permit to copy some of the old masters' works in the leading European art galleries.

It is, perhaps, natural that the fortunate possessor of such a beautiful form and such amazing strength should have buoyant health and spirits. Add to her physical gifts her intellectual accomplishments and you have the secret of the wonderful personality that captivates everyone who has the good fortune to meet this artiste personally.

Can a Man Come Back?

(Continued from page 54)

proved, and though he tried hard to come back in the years that followed he never quite made it. He had his strength and he had the stamina, but the speed was gone.

Morris Kirksey of California and Loren Murchison of Missouri, both displayed rare promise for the future in the National Championships of 1919. Murchison went on to victory after victory both in the winter of '19 and the winter of '20 and in the summer of '21 also. Then he commenced to fade, and he never has reached the pinnacle since that time. The same was true of Kirksey. Though the strong man of California has run several great races since 1920, he has done nothing startling for the season and his best days are admittedly behind him. Both these men had plenty of strength. That was not the reason for their failure.

The question of being able to come back seems, then to rely upon many factors. The fighter, after a period of idleness usually fails, though sometimes his strength will tide him through. The long distance runner, if he has taken

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A remarkable discovery has already restored to health thousands of men suffering from the distressing ailments common to men past 40. Every man should read the facts given here.

DO YOU suffer with sciatica, pains in back, legs and feet, frequent nightly risings, painful micturition, mental or physical depression? Doctors and Scientists have long recognized that the cause of these, and many other painful con-

ditions, was the disturbed condition of a little gland called the prostate. And now a certain Scientist has discovered a wonderful new hygienic principle that has already been used with phenomenal success by thousands of men in restoring this little gland to health. Many cases are reported where relief was obtained when a surgical operation had seemed the only recourse.

What this Discovery Can Mean to You

An authoritative medical treatise says that 65% of all men past a certain age suffer with a disorder of this gland. If you experience any of the conditions mentioned—have chronic constipation or prostatic disorders—you should not delay in finding out about this discovery. Do not let "approaching age" encroach upon your mental and physical vigor and alertness. If you will write at once you can get free an interesting booklet called "Why Many Men Are Old at 40," written by the scientist who discovered this new method. Don't risk your health by delay. There is no obligation. Simply send name and address, mentioning ailment, if you want specific information. Address:

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the proper care of himself can last a long time, and can successfully come back. The weight men, who are not dependent upon either stamina or speed, so much as they are upon strength, have stayed in the game for many, many seasons. While there has yet to come a sprinter who could long remain at the top of his competitive form.

The real reason for this state of affairs does not seem to be condition (though this has a very great deal to do with both the lasting qualities of the champion and the health he will enjoy in his later years) as it has to do with those three main principles that govern athletic success, the principles of speed, stamina and strength. And these three stay with a man in the order in which they are named. The sprinter who is almost entirely dependent upon speed is the first to go, because speed cannot be retained for an indefinite length of time. The fighter who counts on his speed to win for him, also passes soon, while the long distance runner and the athlete who is dependent upon stamina lasts longer, and the athlete whose success is founded upon strength has the greatest competitive life of them all.

The man who allows himself to go in any form of athletics is doomed! Before you ask "Can he come back?" you must admit he has slipped and if he has, the answer is emphatically and irrevocably "No!"

Boxing

(Continued from page 59)

sometimes called side-slipping. In this body slip, as it is also termed to distinguish it from a head slip, the left foot steps forward and to your right past the outside of your opponent's left foot, your right foot following instantly in order to enable you to pass by or to get to the rear of your man as may be necessary.

The weak point of this form of side-stepping or, strictly speaking, side-slipping, is that it unduly exposes your left side to a very damaging punch. Nevertheless its practice should not be neg-

lected as it may be useful at times in order to get away from, pass by, or get to the rear of your man.

Unless facing a man who stands with his right foot forward, this body slip is always done forward and to your right, in other words, pass by on your man's left side, in order to avoid the possibility of running full tilt into your opponent's right hand.

(To be continued next month)

The Mat

(Continued from page 62)

a young girl, won the tennis championship several years in succession. Then she dropped out of the national competitions. But when Mlle. Lenglen came over here a year or two ago May Sutton, now Mrs. Thomas Bundy, placed herself in the first line of defence of the American tennis forces, and, although she had been out of competition for over a dozen years and was the mother of four children, she played a whirlwind game and reached the semi-finals. There is no sport which requires such combined skill, speed, endurance and condition as tennis does. Mrs. Bundy staged a genuine "come back," and experts said that she played just as good a game as she did when she won the championship, but that she was up against harder competition.

Since the publication of the March issue I have had fifteen more letters requesting an article about Eugene Sandow. When I have a hundred requests I will write the article.

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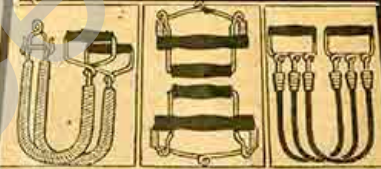
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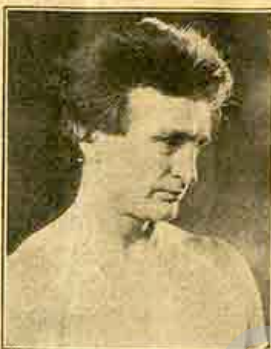
After a period devoted to intelligent consideration of the reason for loss of hair, together with sensible, dependable methods for building hair health, I found a way out.

Here I am, thirty years later, with a head of hair as shown in the accompanying picture.

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instructions presented therein. You can thicken and strengthen the hair you already possess. You can make it more healthy and lustrous in appearance.

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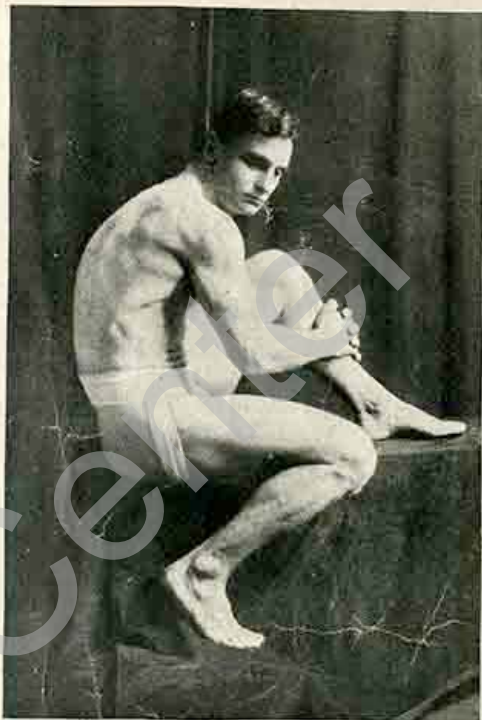
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