September 1923

Strength

The Magazine of Good Health

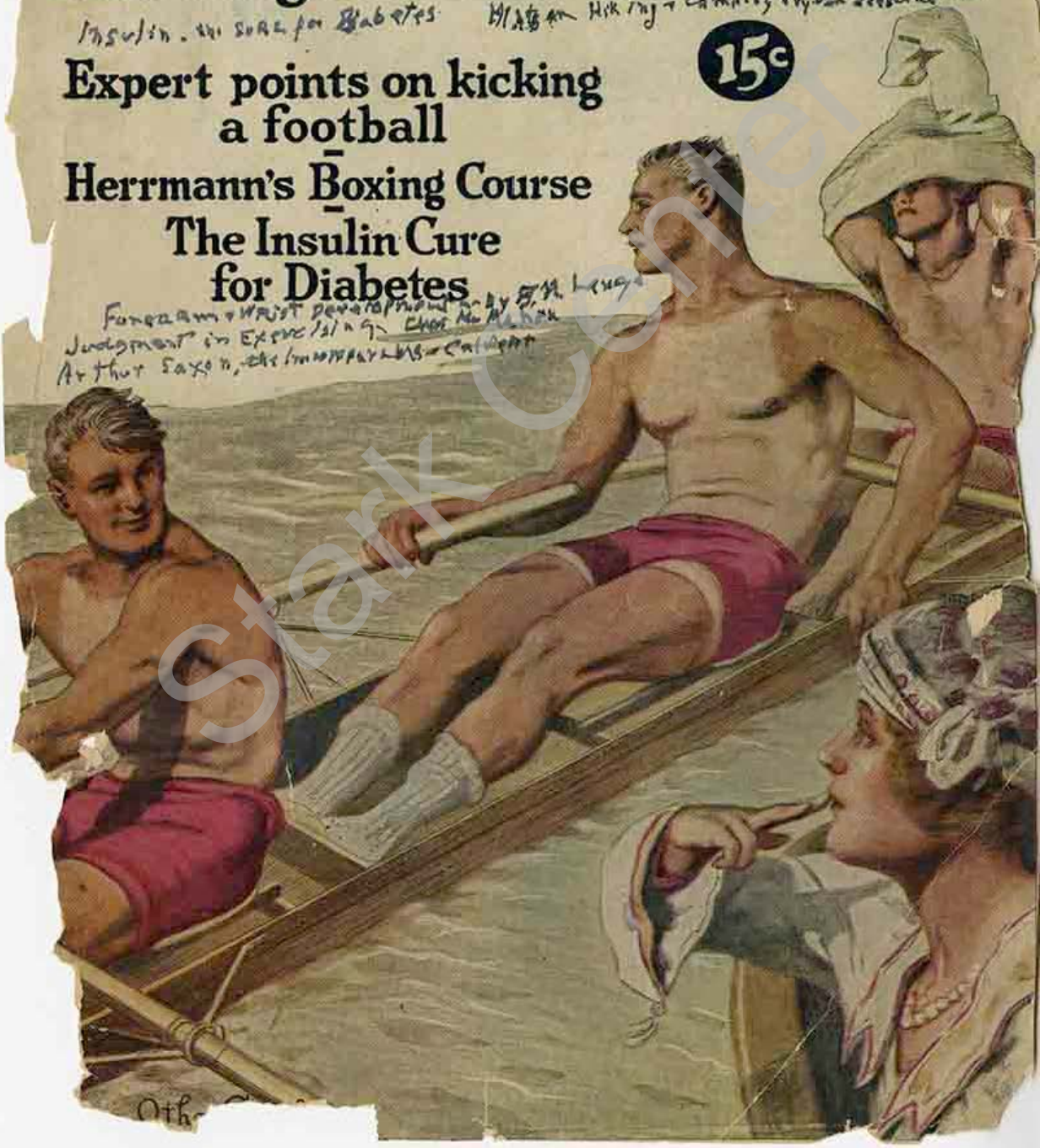
Insulin - the cure for Diabetes

15c

Expert points on kicking a football

Herrmann's Boxing Course

The Insulin Cure for Diabetes



"ANOTHER OF YOUR SUCCESSES"

The Milo Bar Bell Co.

Gentlemen:—

I am enclosing some pictures of myself so that you can add one more to your list of successes.

Some time ago I purchased one of your Duplex bar bells, and by faithfully using it, I have acquired such development that all the money in the world could not buy that bar bell from me.

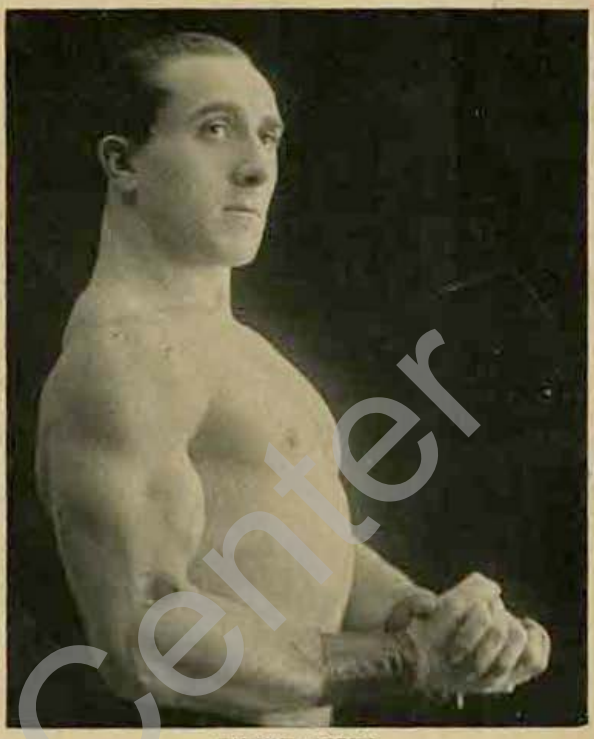
If I were to tell you how low was my physical condition when I started your course, and the tremendous gains I have since made, you would be more than justified in claiming that your system is the finest in the world. In addition to obtaining perfect health and building up a remarkable development, I have become so strong that I can "put up" a 215-pound bar bell with either hand. I am many times stronger than when I started at your course.

My present measurements are: Chest 44½ inches, biceps 16 inches, thigh 23¾ inches, forearm 13½ inches, neck 16½ inches, waist 31 inches. My weight is 159 pounds. Don't you think that they are pretty good measurements for an amateur who is only 5 feet 7½ inches tall?

I am so happy over what I have accomplished under your directions that I would like you to publish my pictures, because I wish people to see the results that one can obtain through your methods.

Again congratulating you and myself, I remain,

Yours gratefully,
HARRY GLICK,
1930 Grand Concourse, New York City.



HARRY GLICK

When Mr. Glick began training with his bar bell he adjusted it to 45 pounds and used it at that weight in the two arm exercises. Since then he has gained so much in size and strength that he can "put up" 215 pounds with one arm.

We are proud of the fact that Mr. Glick can make big lifts. We are prouder still that he has built up a 16-inch arm and a 44½-inch chest; but we are proudest of all that he has acquired perfect health. Look at him. He is not only a model of development, but the picture of condition.

FOR TWENTY YEARS WE HAVE BEEN DEVELOPING MEN LIKE MR. GLICK

Twenty years' work and experience which has helped us to perfect that greatest of all body building devices—*the adjustable bar bell*—and to work out a system of training that will help anyone (no matter how weak and puny) to acquire health and condition, strength and development.

GLICK'S CASE IS NOT EXTRAORDINARY—*FOR US*

We took no greater pains with Mr. Glick than with any other pupil. He got just our regular service; that is, the adjustment of our general principles to suit his particular needs. And every pupil gets that; whether he is working for a big biceps, whether he wants to add shape and size to a pair of spindly legs, whether he wants to take ten inches off his waist line, or whether he wants to add ten inches to his chest measurement.

We Are the Originators of **Progressive Exercise** and the world's largest manufacturers of adjustable bar bells. It will pay you to investigate our goods and training methods. We suggest that you send for our free booklet, "Health, Strength and Development and How to Obtain Them."

SPECIAL

In our advertisements in the February issue of this magazine, we announced that we would issue a pamphlet, entitled "How Much Should I Measure and How Much Should I Weigh," written by Alan Calvert. We believe that this is the most valuable article on that subject ever published. Here is what was said of the pamphlet by the Physical Director of one of our largest universities.

Of the various systems of measurement used by physical culturists, there is no doubt in my mind that Mr. Calvert's system is the best ever devised. It is a system based upon long years of practical experience in the development of real physical-culture men. Mr. Calvert's system is not one of mere guess work. It is not an impossible system. It is not a system that is too ideal. It is a standard that anyone can really attain. Each individual is practically his own standard. His height, the size of his wrists and ankles; in other words, his individual frame-work is the determining factor, in so far as saying what the extent of his muscular development should be, and can be."

We believe that every man (and every boy over sixteen) who reads the STRENGTH MAGAZINE should own one of these pamphlets. It will not only enable him to check up the results which he has so far obtained by his past training, but it will also let him know his own possibilities in the way of muscular development.

This pamphlet is given only in connection with the book mentioned above. So when you write us, be sure and say "Send me your book

'Health, Strength and Development and How to Obtain Them,' and the special pamphlet 'How Much Should I Measure and How Much Should I Weigh?'"

THE MILO BAR BELL CO.

301 Diamond Street **Department 43** **Philadelphia, Pa.**

10 Days Free Trial

BOXING Jiu Jitsu Wrestling $1.97 Plus Postage

Here is your opportunity. You can secure the famous Marshall Stillman Boxing Course for the price of a good necktie. Six books printed in good clear type and illustrated by 246 half tone engravings. You certainly never expected this amazing offer.

The Marshall Stillman scientific method of instruction is the most effective way of teaching boxing ever invented. You are not confused and discouraged at the outset or by being "beaten up" by a more skillful opponent. Every movement is properly taught you before you put on a glove. When the time comes for practice bouts, you can feint, side-step, block and hit like a veteran.

The Marshall Stillman Course is based upon the teachings of Professor Mike Donovan, probably the greatest boxing teacher who ever lived. It has been used and recommended by boxing teachers and professional fighters. The fine points of ring science, the guarded secrets of master boxers lies open to your inspection. All phrased in plain, simple language and clearly Illustrated.

It includes fundamentals; scientific blows and guards; the lives of great fighters with many previously unpublished stories and descriptions of their best blows; shadow boxing; training; rules of the ring and strength building exercises; jiu jitsu and wrestling.

It will afford you real pleasure to be able to box rings around your pals when you engage in friendly bouts, and you never know when you can turn your boxing knowledge to practical account. At any time you may be called upon to use it in defense of your sweetheart, mother or sister or perhaps your own life or property.

The self confidence and coolness you will get from boxing is likely to have a favorable influence upon your whole future life. You would be amazed at the letters we receive from subscribers attributing raised in salary and better positions to the poise of self reliance they have acquired through the course. Men and women respect and admire the young man who can take care of himself under any and all circumstances.

You can master the fine manly sport of boxing from the Marshall Stillman Course more easily and inexpensively than any other way. Over 35,000 subscribers *proves it.* Mail the coupon today.

SEND NO MONEY

MARSHALL STILLMAN ASSOCIATION
Dept. 1723-I. 42nd St. and Madison Ave., New York

You may send me on approval the Marshall Stillman Course. I will deposit 97 cents (plus actual postage) with the postman, with the understanding that if, after 10 days, I wish to return the course, I may do so and my money will be instantly refunded. If I keep the course, I am simply to send you $1 in final payment.

Name .....

Address .....

Canadian and foreign orders must be accompanied by cash ($1.97 U. S. funds) subjects to money back guarantee if not entirely satisfactory.

STRENGTH

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Table of Contents

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Indian Agent, B. P. Madon, "Health Home," Vera Cruz, Bombay, India.

Science Discovers the Secret of Caruso's Marvelous Voice

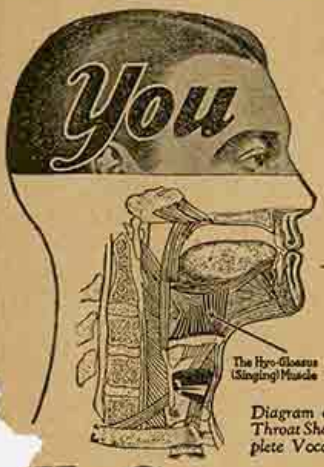


Diagram of the Normal Throat Showing the Complete Vocal Mechanism.

Caruso's Throat and Yours

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.

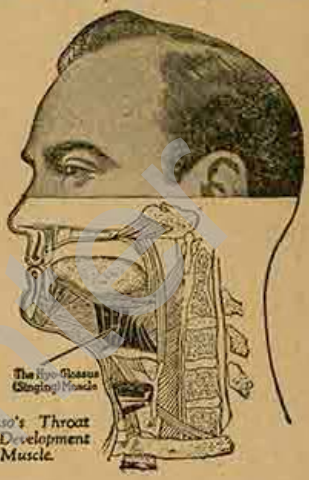


Diagram of Caruso's Throat Showing the Superb Development of his Hyo-Glossus Muscle.

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, Munich, Dresden, Berlin, Bayreuth, Vienna, Paris and Florence, 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, Professor Feuchtinger devoted years of his life to scientific research. His reward was the discovery of the Hyo-Glossus, the "Singing Muscle".

Professor Feuchtinger went even farther into the Science of Singing. He perfected a system of voice training that will develop *your* Hyo-Glossus muscle by simple, silent exercises right in your own home.

Grand Opera Stars Among His Students

Hundreds of famous singers have studied with Professor Feuchtinger. 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. The results are sure.

The Perfect Voice Institute guarantees that Professor 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.

A Beautiful Voice for YOU

You do not know the possibilities of your voice.

If you want to sing—if you have always felt that you could sing but lacked the proper training because you had not the time nor the means to study—here is your chance. Professor Feuchtinger's course will improve your voice 100%. 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.

Professor Feuchtinger's Book *"Voice Culture"* Free

Send us the coupon below and we'll send you FREE this valuable work on the Perfect Voice. Do not hesitate to ask. Professor Feuchtinger is glad to have us give you this book and you assume no obligations whatever by sending for it.

You will do yourself a great and lasting good by studying this book "Voice Culture". It may be the first step in your career. Do not delay. The number of these books is limited. Send for "Voice Culture" today.

Perfect Voice Institute

1922 Sunnyside Ave., Studio 57-76, Chicago, Ill.

Perfect Voice Institute
Studio 57-76 1922 Sunnyside Ave., Chicago

Please send me FREE Professor Feuchtinger's book "Voice Culture". I have put X opposite the subject that interests me most. I assume no obligations whatever.

☐ Singing ☐ Speaking ☐ Stammering ☐ Weak Voice

Name_____

Address_____

_____ Age_____

The Fast Can Restore Health Where Everything Else Has Failed

Once Understood, the Theory of the Fast Appeals So Strongly to Your Common Sense That You Are Not Surprised at the Almost Unbelievable Results It Has Accomplished

NATURE fights disease or weakness in your body through the medium of your blood. Blood is your army of protection. When not occupied otherwise it gives its time and attention to fighting disease, killing off obnoxious germs, expelling foreign matter, removing dead cells—in a word to freeing the body of *everything* detrimental to perfect health.

But practically your entire fighting force is called away to lunch every six hours or so, leaving the enemy to make marked progress during their absence.

As compared with human beings there is almost no chronic functional disease among animals in the natural state.

When a horse is sick he "gets off his feed." Natural instinct tells him to fast and he obeys. Not another mouthful does he eat until natural hunger returns. And natural hunger returns only when health is restored.

Man no longer recognizes instinct in matters affecting health. Instinct has been replaced by reason and reason is often wrong. Humanity has departed from the ways of nature and is paying a terrible price in sickness, misery, disease and death.

Hundreds of cases of desperate functional diseases have been cured by a careful and skilled administration of the fast after every other means of treatment had failed.

Thousands of other cases, not so far advanced, have responded quickly and easily to nature's most powerful factor in driving out disease.

IF intelligently administered in accordance with the directions given in "FASTING FOR HEALTH," the following ailments should respond readily to the fast:

Asthma
Biliousness
Bladder Disease
Bronchitis
Catarrh
Constipation
Coughs and Colds
Diabetes
Diseases of the Prostate Gland
Diseases of the Rectum
Diseases of Women
Dyspepsia
Emaciation
Epilepsy
Ear Troubles
Eye Troubles
Headache
Heart Disease
Insomnia
Impotency
Kidney Disease
Liver Disease
Neurasthenia
Obesity
Paralysis
Rheumatism
Skin Diseases
Stomach Diseases
Vital Depletion
Youthful Errors

There are millions of people today ailing, weak, diseased, discouraged, who could be in perfect health within three months—new men and women—if they knew the wonderful power of the fast to heal and how to administer it properly.

For many years, Bernarr Macfadden, head of the nation-wide Physical Culture movement, has known the tremendous value of the fast in curative practice. Regularly, several times each year, he has renewed and cleansed the tissues of his body by fasts of from three to fifteen days' duration.

He has supervised and observed the results of the fast upon thousands of men and women afflicted with a long list of diseases, many of them seemingly beyond help and the astonishing results achieved convinced him that if an authentic book on fasting could be placed in the hands of every man and woman having a health problem to solve, there is no limit to the amount of good it could accomplish.

Out of that conviction came the determination to provide just such a book and so, from the wealth of specialized knowledge that is his, he has created

"Fasting for Health"

which we believe is unquestionably the most remarkable, the most complete and far-reaching work on the subject that has ever been written. We do not know of another man in the entire world as able to deal with the subject of fasting as Bernarr Macfadden. After going thoroughly into the general aspects of "FASTING FOR HEALTH," he takes up case after case of the specific treatment of functional diseases so that, no matter what your trouble is, you will probably find the detailed description of the treatment of a similar case so minutely covered, step by step, to the point of complete recovery that your delight will know no bounds.

Mr. Macfadden Wants You to Examine This Book at His Risk

He knows that once you have had an opportunity to go thru it, page by page, you would not think of parting with it. And so, he has instructed us to send copies of "FASTING FOR HEALTH" to all upon a five days' approval basis.

Although the price of this priceless book has been made extremely low—only $2.00—you are not required to send one penny in advance. All that is necessary is to fill out the coupon provided below and mail to us. When the postman delivers "FASTING FOR HEALTH" to you, pay him $2.00, which will be looked upon simply as a deposit. If at any time within 5 days after receipt you decide for any reason that you do not wish to keep it, return to MACFADDEN PUBLICATION, INC., Macfadden Building, 1926 Broadway, Dept. S-9, New York City.

"There is a popular but wholly erroneous idea that one undergoing the fast grows gradually weaker. This is far from the fact. In most instances for a time, the faster actually becomes stronger."—Bernarr Macfadden.

MACFADDEN PUBLICATIONS, Inc.
Dept S-9, Macfadden Building, 1926 Broadway, New York City

Entirely at your risk you may send me a copy of Bernarr Macfadden's new book, "FASTING FOR HEALTH." Upon receipt I will pay the postman $2.00.

It is understood if after examining it for five days I decide for any reason not to keep it you will immediately refund my $2.00 upon return of the book.

As a special offer we will enter your name for a one year subscription to PHYSICAL CULTURE and send you "FASTING FOR HEALTH" for $4.00. Ordinarily a subscription to PHYSICAL CULTURE and "FASTING FOR HEALTH" would cost you $5.00. This special offer saves you $1.00.

Name .....

Street .....

City .....State.....

"Now I am Invited to the Best Homes"

I was actually amazed with the rapidity of my success after I had developed ability as a fine dancer. All my new friends were anxious to help me. Now I am well established in business and have a wide circle of influential friends.

By PHILIP BERLE

"A YEAR and a half ago I was earning only twenty dollars a week, with a future before me that didn't look very rosy. Today I have everything that any reasonable young man could want. Sometimes I spend as much in one evening as I used to work a whole week for. I am accepted as an equal by men of large business affairs; I am invited to their homes in a social way. They address me by my first name, and I have no difficulty in getting to see them in a business way.

"You may consider my quick rise in the world is being phenomenal luck, but, as a matter of fact, it is entirely due to being thrown in frequent contact with the right kind of people through my ability as a good dancer.

When I was poor and lived in a hall bedroom, I could not afford to spend much money for theatres and other expensive pleasures and, for that matter, neither could the other fellows in the office. In order to get a little fun out of life we formed a 'Social Club' and all of the fellows and girls chipped in so much a week toward the expenses of a dance and something to eat. But I couldn't dance and so I didn't get very much out of the affairs.

How Dancing Made My Success

"One day I heard about Arthur Murray's methods of teaching dancing by mail, without music or partner. To make a long story short, I sent for the course, quickly mastered the steps in my own room and soon became very popular because of my dancing ability. Then one evening I was invited to a dance where I was introduced to the daughter of a well-known business man. We danced together for the rest of the evening. Later I received an invitation to an affair at her home, and the people I met there invited me to other affairs. Through the friendships formed at these social events various good business propositions were made to me, one of which I accepted. So, you see, my rapid advance in life is all a chain of common sense events which started when I learned how to dance through Arthur Murray's method at home, without music or partner."

ARTHUR MURRAY
Dancing Instructor to the Vanderbilts

Learn Tonight—Dance Perfectly Tomorrow Night

More than 90,000 people have learned to dance by mail this new way and have been perfectly satisfied with their lessons. And this great number alone ought to be your assurance that you, too, can learn just as quickly and easily as they learned. More than 5,000 people a month are learning to become expert dancers through Arthur Murray's simplified methods.

Arthur Murray is perfectly willing to guarantee that you won't have the slightest difficulty in mastering the steps of any dance. To prove this, he will send you on five days' personal trial a special introductory sixteen-lesson course. Through these sixteen lessons you will learn the Correct Dancing Position—How to Gain Confidence—How to Follow Successfully—The Art of Making Your Feet Look Attractive—The Correct Walk in the Fox Trot—The Basic Principles in Waltzing—How to Waltz Backward—The Secret of Leading—The Chasse in the Fox Trot—The Forward Waltz Step—How to Leave One Partner to Dance with Another—How to Learn and Also Teach Your Child to Dance—What the Advanced Dancer Should Know—How to Develop Your Sense of Rhythm—Etiquette of the Ballroom. And, remember, an entire family can learn from this one set of instructions.

Send No Money—Not One Cent

Just fill in and mail the coupon and the sixteen lessons will be promptly mailed to you for five days' examination. Don't send one cent now. When the postman hands the sixteen lessons to you, simply deposit $1.00 with him, plus a few cents' postage, in full payment. 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 835, 290 Broadway, New York.

ARTHUR MURRAY, Studio 835
290 Broadway, 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 and when the postman hands it to me I will deposit with him $1.00 plus a few cents postage in full payment. If within five days I decide to return the course I may do so and you will refund my money promptly and without question.

Name .....

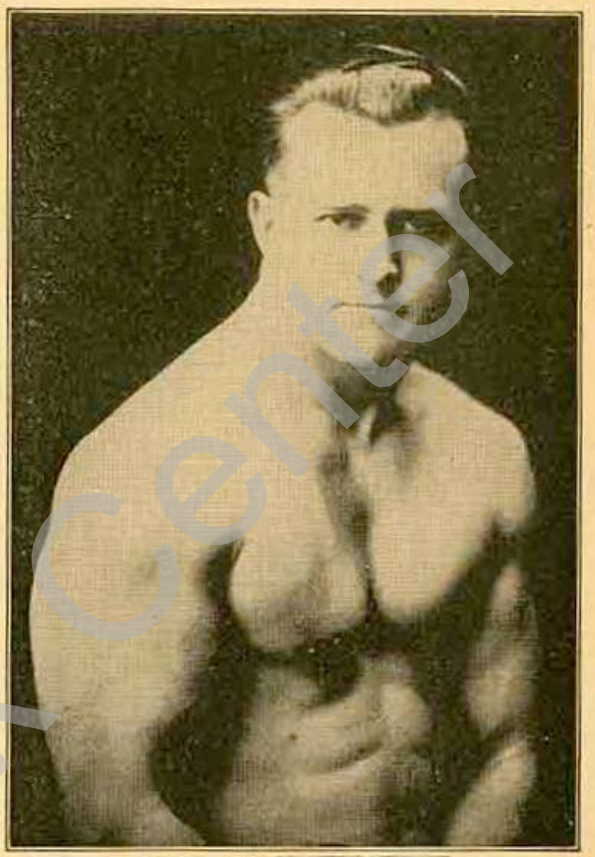
Address .....

City ..... State .....

Would You Like To Teach Dancing?
Residents of England write to 150 Southampton Row, London.
Outside U. S. A. must send cash with order.

LAUGH, DEAD MAN —LAUGH!

A few months ago, the *Health & Life* magazine published by error in their editorial that I died while attempting to swim the Niagara Rapids. I am glad to say I never made such an attempt; nor shall I. This was of course corrected by the editor. Nevertheless many letters came to my school inquiring if I was alive or not. I laughed at them.



Earle E. Liederman as he is to-day

Why Shouldn't I Laugh?

I am very much alive, my friends—have never felt better before. I am stronger than ever, my muscles are larger and I have untiring energy. Every day I am busy teaching pupils, building them up to physical perfection, and giving them all the health and strength they want—and more too! Each day new strong men are turned out to join my vast army of athletes. . . . Yes I am alive, boys, and I always feel great.

I Thrill With Vitality!

It's a wonderful feeling, let me tell you, and all my pupils know it, too. Up in the morning full of pep—feeling as lively and chipper as a kid, and ready to tackle a good day's work—and hard work at that. Even when toil is over I still feel refreshed. It's great to feel that way. *Let me do the same for you.*

Send for My New 64-Page Book

"MUSCULAR DEVELOPMENT"

IT IS FREE

It is chock full of photographs both of myself and my numerous pupils. Also contains a treatise on the human body and what can be done with it. This book is bound to **interest** you and **thrill you.** It will be an **impetus**—an **inspiration** to every **red-blooded man.** I could easily collect a big price for a book of this kind just as others are now doing, but I want every man and boy who is interested to just send the attached coupon and the book is his—**absolutely free.** All I ask is the price of wrapping and postage—10 cents. Remember, this does not obligate you in any way. I want you to have it. **So it's yours** to keep. Now don't delay one minute. This may be the turning point in your life. Tear off the coupon and mail at once while it is on your mind.

EARLE E. LIEDERMAN

Desk 33 **305 Broadway, New York City**

EARLE E. LIEDERMAN

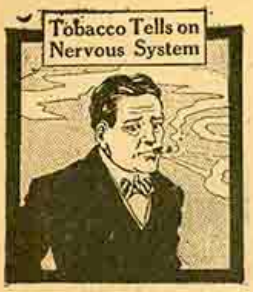
Desk 33, 305 Broadway, New York City

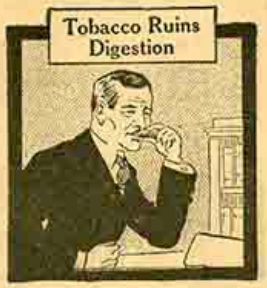
Dear Sir:—I enclose herewith 10 cents for which you are to send me, without obligation on my part whatever, a copy of your latest book, "Muscular Development." (Please write or print plainly.)

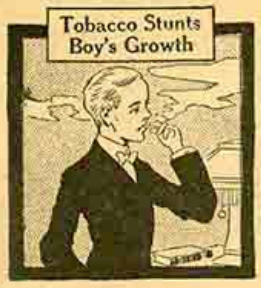
Name .....

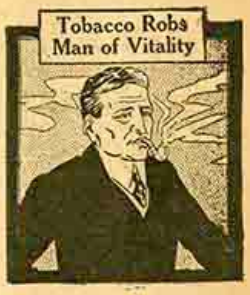
Address .....

City..... State.....









Tobacco - a Man's Delusion

Thousands of men are under the delusion that they actually **need** tobacco! They think they couldn't possibly get along without it. But can any man honestly say that tobacco has ever done him the slighest good? How can it, then, be in any sense regarded as a necessity?

No, the use of tobacco is an utterly **useless** habit. And think of the expense. Count the nickles, dimes, quarters and dollars you spend for cigars, cigarettes, pipe or chewing tobacco or snuff—by the day, week, month and in years. Even a dime a day is $36.50 a year; a quarter a day makes $91.25 a year; a dollar a day $365.00 a year—the interest at 6% on $6083.33 CASH CAPITAL you'd have to save to have your wasteful tobacco bill earned and paid for. And you haven't a single thing to show for it—**except poorer health!**

After all is said and done that is the real reason you should quit tobacco—because of the effect it is having on your health. Even if you can easily afford the extravagant money waste, the physical, mental and nervous effects of tobacco are bound to tell. Leading authorities agree that tobacco is damaging to the heart, that it impairs normal brain activity, and deadens a man's vitality. Any doctor will tell you these are facts. No tobacco user can dodge them. Some day he **must** pay the penalty. Every smoker, every chewer, every snuff taker is taking into his system a **deadly poison** that slowly but surely undermines his health. Think this over, you tobacco users. You're paying too big a price both in money and the lowering of your vital forces and general efficiency for a mere habit that you have come to regard as a necessity—but which isn't. Quit tobacco and you'll eat better, sleep better, feel a hundred per cent better in every way. You'll think clearer, have more energy, be more efficient in every thing you do. Here's an easy way for you to quit. Read our remarkable offer.

Tobacco Habit Banished

LET US HELP YOU

It doesn't make a particle of difference whether you've been a user of tobacco for a single month or 50 years, or how much you use, or in what form you use it. Whether you smoke cigars, cigarettes, pipe, chew plug or fine cut or use snuff—**Tobacco Redeemer** will remove the craving for tobacco. Your desire will usually begin to decrease after the very first dose—there's no long waiting for results.

Tobacco Redeemer contains no habit-forming drugs of any kind. It is not a substitute for tobacco, but a radical, efficient, time-tried treatment which you can prove in your own case on our special offer.

Results Absolutely Guaranteed Our legal, binding, money-back guarantee goes with each full treatment. If **Tobacco Redeemer** fails to banish the tobacco habit when taken according to the plain and easy directions, your money will be cheerfully refunded in accordance with agreement we furnish with every complete course of treatment. We take the risk because we know what this great treatment has done for thousands of users—many bound for years by this money-wasting, health injuring habit. Do no hesitate. Act!

Valuable Book FREE Send now for our scientific book on tobacco and its effects. Learn from it just how nicotine attacks the nervous system, affects the heart, impairs digestion and paves the way to mental and physical deterioration. Learn also how the tobacco habit may easily be broken. Full explanation is given of the action of the remedy which has freed thousands from this craving. You ought to have this book even if you are only a moderate user. It is free. Send the coupon or a post card for your copy.

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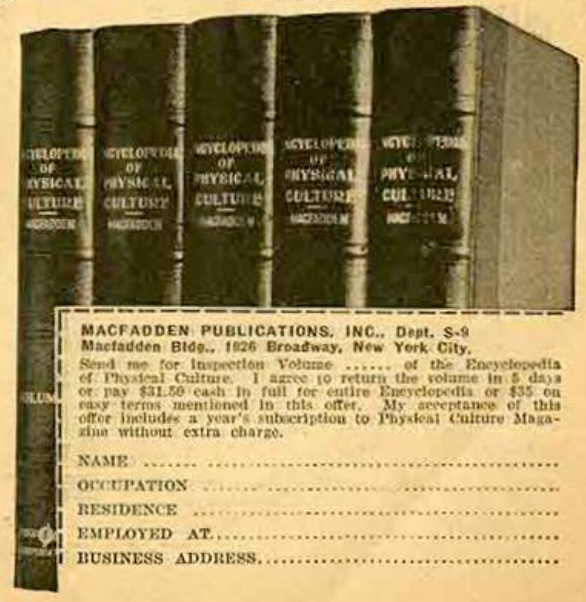

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A picture of two young Hollywood beauties, taken on a recent Eastern tour. (See Mr. Wayne's article on page 36.)

Falls of Swift River is a region that is popular with vacationists.

Outdoors at Its Very Best

Practical Hints on Hiking and Camping

By T. Von Ziekursch

JUST around the turn is the golden season of the year. More and more the belief that nature is dying as autumn approaches is giving way to the realization that this is the time of its fruition. Slowly the sycamores, maples, oaks and aspens will be turning from the greens to the yellows and then the reds and scarlets that mark the time of ripeness. This is the period when nature lifts all her bans, when for from six weeks to two months the best that she has may be enjoyed to the limit. To the writer it seems that this is the ideal season for a vacation. For those who would seek the finest balance of a living ration, is there any better time to come in closest contact with the out-of-doors? Now the waters are warmest, the days have lost their intensity of heat that has marked the last weeks, nights are comfortable, the fish are hungry again and will prove it if given a chance! Life is good.

Just a few years back that great family of gloom dispensers who are continually crying that something is wrong with the world or individuals who make it up were finding reason for their doleful wails in the belief that the American people were a softening breed who had forgotten that such things as outdoor exercise and the value of fresh air existed. In a sense they may have been right, but it seems to us now that it was but a temporary hiatus and that memory is returning. In other words, we have believed for the past several years, in fact we have known, that the great hegira to the places

where the air is unsmirched by smoke and grease is on again.

Given the opportunity and your American is a natural out-of-doors person. He had forgotten how, it may be true, but it did not take much to get him started again. The instinct was born in him. It is his heritage. Several great movements, such as the Boy Scouts, have aroused the latent desires and the war gave a few million a taste that it will be difficult to forget.

During the past few years we have traveled through four national forest reserves and many, many miles of state reserves. Never before have we seen anything like the invasion of the forests and mountains that has grown up, especially during the last three years. What is more, this is fast becoming an intelligent invasion which despite its increasing proportions is giving the forest rangers and other guardians of the comparatively helpless open places constantly less and less trouble. Perhaps the explanation of that is easy. Give the average man free rein absolutely and he is mightily apt to be a destroyer. Teach him that he will want the thing he is destroying next year and show him how he can get just as much real fun out of it without destroying it and you have made a conservationist.

Inasmuch as this is meant to be a somewhat rambling article there is an incident that illustrates right here.

Maine has found it necessary to forbid the killing of moose, because man had virtually exterminated the antlered monsters. Since it has been forbidden to shoot them they are gradually coming back, wandering down again into the Maine forests of the northern lake region from the wild reaches of New Brunswick. Indian and white natives of the Maine woods know and understand. They do not break the edict. In that northern lake region of the state are many camps where city men go for the summer vacation. Lest they break the law they are told in a way calculated to make them understand, that the moose must not be harmed. Last summer a wealthy city man at one of these camps shot his deer, out of season of course. The Indian who was a paid guide at one

An ideal camping place along the Pacific coast.

Camping out in an up-to-date style.

of these camps and who was taking care of this particular white man, protested mildly. Several days later this same white man, fishing from his canoe, saw a gigantic bull moose come sloshing out at the edge of the lake. He killed it. There was no purpose, no use, merely wanton murder. He dared not so much as take a hoof for a desk trophy, had to merely let it lie there to pollute the lake, but he had satisfied that primeval lust to kill.

The Indian said nothing, in fact refused to talk at all, as we heard the story. But that night he packed the duffle into the canoe and insisted that the white man return to the headquarters camp. There the white man was told that inasmuch as he had paid his bill in advance he would be allowed to remain for the rest of the period, but that he could never come back and that if he came to any other camp in the state the authorities would be notified of his crime. Furthermore, that particular camp housed quite a number of real fellows, professional and business men, writers, etc., and the violater found himself so ostracized that within three days he departed for the city. There are some few who never will learn.

You are unable to go to the lake region of Maine and if you did you wouldn't shoot a moose? All right—the lake region of Maine is within a few miles of your home. It is inaccessible only in your own thoughts. The moose are the squirrels and rabbits, the landlocked salmon and elusive trout are the bass, the pike or pickerel, the sunnies and roach of your own streams. Much of it is the mental attitude, at that.

You wouldn't have the money to pay fees demanded at one of those Maine camps? All right, why bother about somebody else's camp and paying some other man fees for the things you would get a great deal of the real fun out of doing for yourself?

The writer has seen a good bit of this country and would not care to see it the same way again—from the windows of trains. Most ambitions are carefully guarded secrets, perhaps because of a sense of shame that is false and really has not reason for existence. We have

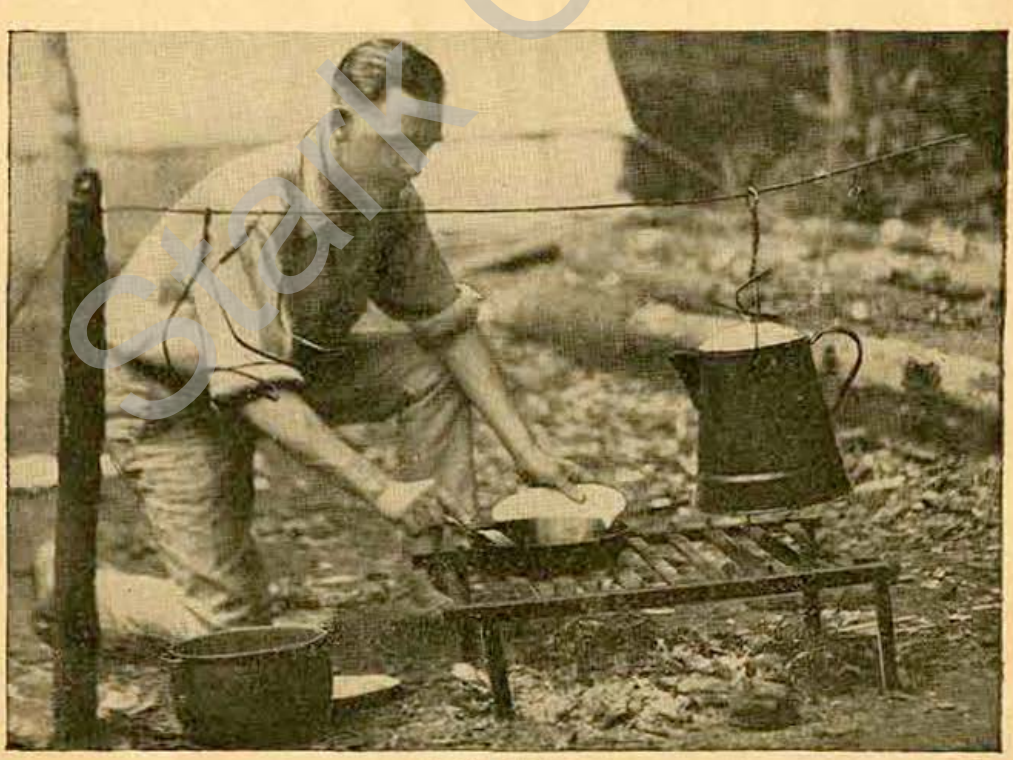
one that is rather powerful and not secret. It is to see this country as we would—by walking.

Thoreau says, "I have met with but one or two persons in the course of my life who understood the art of walking. . . . ." When he said that he very probably was giving one of them the benefit of the doubt.

July is past, August is gone, now come September and October, during which Nature offers everything she has to become acquainted. But how? May we offer a few suggestions for about the happiest combination, a magic one that we have arrived at after a good deal of yearning, though, and experience? The result does or should combine everything you have been longing for these many years. A winter, a summer of work, a year of it and you are jaded mentally, physically. This is not written for the man whose unlimited checking account is the hocus pocus to vacation land nor for the boardwalk and hotel lounger who has looked forward to that type of enjoyment for months. It is written for us of the great majority who long for that brief spell of really knowing the woodlands, the fields, the mountains, the streams, who have read of the saunterers of the English countrysides and longed to emulate them.

Your English countrysides are here just as well and just as free. As the years pass there will be more and more Americans using them.

There is that town a hundred miles away on the river, at the seashore or lake, the gap in the mountains where, it has always seemed to you, romance lives. You have always wanted to see it and know it. It is associated with some historic event, you know some one who lives there or you want to visit it for one of many other possible reasons. Why not go to it as you would? Vacation land is a mental place more than a physical. And the expense of it means very little.



Cooking de luxe.

There are plenty of hungry fish ready to bite in the autumn.

We have in mind what we consider an ideal vacation. It requires very little planning, a willingness to enjoy yourself and a few dollars only. It is a happy combination of a boyhood hike and a camping trip with such side issues as may be added when there is opportunity. That should include a little fishing if you are so inclined and some hunting of the easiest kind—with a camera.

A year ago we told about the kind of a light camping pack we have found most serviceable for all kinds of use. Remember you are not heavy artillery nor a truck caravan and the more you load yourself down with the more discomfort you are going to have. You are going to the place you have long wanted to go to or you are going to merely take the rambling walk you have always wanted to take, so why not figure on enjoying it?

If you are going to spend the nights at inns, countryside hotels or in farm houses your pack should be just so much lighter. And you will find that although you are going into the land of romance and adventure (if you have the right mental attitude) you will not need the equipment of an Arctic explorer. It really is surprising how little one should carry on such an expedition.

A camping trip to most means heavy tent, blankets, all sorts of pots, pans, pails and hardware enough to make a housewife happy at a bargain sale, stocks of food and endless what-nots of all descriptions. At most, for the kind of trip we have in mind our own outfit would contain a very small shelter tent that could be rolled into almost nothing in size and weighing a few pounds only, perhaps a blanket and one of those tiny aluminum cooking outfits with whatever clothing changes we deemed necessary, an extra shirt, underwear and socks, the whole to weigh not over twelve pounds.

To this add your camera and it does not have to be the kind that a professional photographer finds arduous to

tote around. A small pocket type will do and we find that it will take about everything we care for. If you are intending to do your own cooking and make a real camping trip of it there is one other small item that you will find well worth while. A couple of thin steel bars a couple of feet long, an inch wide and an eighth thick offer the best possible way to cook out-doors. They can be laid from one stone to another and the fire built beneath. As a resting place for pots they are ideal.

Now you are equipped amply; far better than your ancestors were, and the rest will be as you make it. You may walk forty miles in a day if you are in excellent condition or you may walk ten. The chances are long that if you walk ten you will get far more out of it than if you start out to make Edward Payson Weston and Dan O'Leary hide their heads.

Fine motor highways make the beauty spots of many National Forests readily accessible to the public.

A few dollars in your pocket, the open road in front, the fields and woodlands, the hills on each side of you, and you have the opportunity to find romance-land with your eyes. Do not go expecting to discover the pot of gold of adventure beyond each hill, each turn in the road. It is there all about you, under foot, in the hedging of wild honeysuckle and the brambles at the roadside. We who are given to decrying the passing of all that was wild and romantic in this land of ours should learn that it has only passed because we have forgotten where to look for it.

True there are no Sioux, no Cherokees and Wyandottes on the war trail any longer, no bison herds, but the wood birds have not deserted us, the drama of the wild goes on just the same on a scale that may be less magnificently spectacular than before but is none the less intense, none the less interesting.

What one of us but knows some passing envy of a man such as an acquaintance of mine, a quiet, small man, an eminent zoologist, who has been sent to various parts of the world to study the conditions that have resulted in the wiping out of many species of game and to map out plans of protection that will enable the few remaining ones to propagate and increase the numbers of the race? Yet his greatest interest has been in a group of red winged blackbirds that have selected his small and isolated country place as offering everything they desire for the rearing of their families.

(*Continued on page* 81)

Lengthening Our Lifetime

III

Be Young as Long as You Live —and Live Longer

By Bertha Hasbrook

IF you move into a new house, designed by a competent architect and built by a competent builder—a house in which only good materials were used and put together with trained skill—shouldn't that house last you as long as you live?

Certainly, you reply—if it is kept in repair.

When you were born, you moved into a new house designed and built with the utmost skill—your own body. It ought to last you as long as you live. That's a joke, you say, and a poor joke at that. To be sure your body will last you as long as you live—you and your body are bound to die together.

I take issue. I say that a lot of people outlive their bodies. That is, the body becomes run down, worn out, broken in, wrecked, long before the man or woman that lives inside it is done with life. It is, for most practical purposes, dead. It's no real good for living in—it merely stands, keeps from falling to pieces for a while—that's all. It's through with work, it's through with play, it's through with enjoyment—it's a miserable load that he or she carries about and would like to get rid of. It's like a ruined house that leaks and lets in wind and offers no real protection.

Now if a house was properly built in the first place there's no excuse for its not being in good condition as long as you live. And that is just as true of the average human body. In the normal case, it was well built, with no serious defects—none that could not be overcome—and your only responsibility in the matter is *to keep it in repair as you go along.* Think of that—a good, sound body was given to you as a present; surely it isn't much to ask you to look after the upkeep. Do this, and you'll have it in sound condition as long as you live. Moreover, you'll live a lot longer, in all probability. Like that idea? It's up to you—to be young as long as you live, and to lengthen your lifetime to a considerable extent.

Barring accidents, of course. Death may occur from injury or epidemic or some other unforetellable cause, just as the sound house may burn down or be uprooted by a cyclone. But we're talking within the boundaries of probability; and, on that basis, let's consider the fundamental laws of upkeep.

First of all, every individual should make a religion of the periodic examination. At least once a year you should be looked over by a physician who knows his business, and who will thus be able to catch the first warnings of any disease.

Second, if the physician does find any disease in incipient form, heed the warning. He will tell you what to do about it, what course of treatment or personal care to pursue; follow his advice to the letter. That's what you hired him for. Catch a small leak in the roof of your house, repair it with a shingle or two, and you may never hear from it again. But let the leak run on, and some day you'll need a whole new roof.

Third, educate yourself in the simple laws of hygiene, and obey them. Many sicknesses are prevented by right living, in the hygienic sense, without any need of a doctor. If the person concerned had disobeyed the laws of hygiene, he might have run into a long and serious illness.

Now there you have the basis of the whole thing. On the one hand, positive treatment, on the other, negative; knock out any disease that is starting, and prevent others before they start. You must work it both ways if you want to keep that body of yours young as long as you live; ward off disease if you can, if not, nip it in the bud. Between the two methods, you're not likely to find it getting ahead of you.

There are three maladies that are making more young people middle-aged and more middle-aged people old than any others nowadays. They are diseases of the blood vessels, the heart, and the kidneys. Because of these organic diseases many a business man ages and weakens before his time, and finally is snuffed out like a flickering candle long before he had even entered the hale and hearty old age that was rightfully his.

There is a rapid increase in these so-called "degenerative diseases," and it is time to call a halt.

Thickening of the arteries is one of the most common destroyers of youth. Years, of themselves, can't destroy youth, by the way. The years might run on indefinitely and you still remain young if your physical and mental conditions were sound. We speak of "age" as if it were a disease that kills people: it doesn't. It merely gives the real diseases time to beat us at the game. Why not turn the tables, and enlist Time on your side? Suppose, the longer we live, the longer *we* have to beat disease at *its own game?*

To return to the arteries. It has been found that they sometimes begin to thicken in very young persons, although we are not likely to notice the fact until it develops to a greater extent, along in middle life. The trouble works very slowly, but it undermines steadily unless we head it off at the job.

In the strictest sense, this condition is not normal at any time of life, although it is so frequent in old persons that we have come to think of it as a natural accompaniment of advanced years. But if we could live so perfectly as to avert this and other forms of degenerative disease, we should soon forget that we ever thought it essential to age. Young people who have it are not sufficiently troubled by it to notice, there is no examination made in most cases, and so the difficulty is not observed until it begins to kick up a row along in middle life, when the victim seeks a doctor. But often it has been making steady, secret progress; it may have been the cause of a weakened efficiency, of a non-resistance to various diseases. At last it gets so much worse that the victim begins to sit up and take notice.

"You only forty-one?" says the physician. "Good gracious! Your arteries are fifty if they're a day."

And from fifty they soon gallop to sixty, and to seventy; and one day the victim drops on the street or is found ill in his room. "Right in his prime, too," his friends say. "Ought to have had twenty years yet to lay up a neat little fortune for his family. Hadn't accumulated enough so far. Wonder what his poor wife will do? And there are two daughters, nice girls, but sort o' helpless, the whole lot of 'em."

Physicians call attention to the fact that high blood pressure does not always

Consult a physician: follow his advice to the letter.

accompany thickening of the arteries as is commonly supposed. A normal blood pressure may accompany a really pronounced thickening, and that is a good enough reason in itself for striving to lower it to normal.

In regard to blood pressure, however, it is just as well to bear in mind the fact that awhile ago there was such a fad for this complaint (and the fad is not over yet) that people watched their blood pressure until it is a wonder they didn't all die of it. Even a good thing can be overdone. You have probably heard of the young mother who bought a clinical thermometer and was so delighted with it that she kept it in her child's mouth all the time except at meals, and he finally developed a temperature of 105 in order to satisfy her. I can't say that this tale is vouched for by physicians, but it serves to drive home the point. Look for a thing hard enough, and you may get it—especially trouble. I have known people so nervous, even panicky, about their blood pressure that they actually harmed their own condition by this state of mind. That does not mean, however, that you are to be careless. Far from it. Have your blood pressure watched sharply by a reliable physician, then the responsibility will be his and you need not worry if you are obeying his instructions.

Healthy people, even, vary considerably in their blood pressure, as a result of the nervous condition. If it shows an inclination to increase quickly at any slight provocation, or if it stands all the time as much as 15 mm. higher than the normal average for others of the same age, it calls for attention.

Not long ago a physician who specializes in diseases of children—Dr. Marshall C. Pease, Jr., of New York City, a specialist who has had wide experience in public health work as well as private practice—told me the pathetic story of a little boy who had always been regarded as " dull " and " slow," both in his lessons and at play with the other children. He was listless and behind the others; he suffered perhaps far more unhappiness because of this than any grown-up ever

guessed; and after a long time it was discovered that he was the victim of heart affection never before suspected, and that his "dullness" had been caused by this handicap. Such a case, handled early, may be nipped in the bud; leave it to run on, and a crippled energy is the lifelong result—and probably a short "lifelong" at that.

The kidneys present very difficult problems if they get out of order, but not so difficult as to be hopeless. Not by any means. Science has spent a vast amount of time and labor on the study of this organ, and there are treatments which will correct and probably cure the difficulty if it is taken hold of promptly. But the early stages of kidney trouble are often so hard to detect that only the physician's examination made at regular intervals can safeguard you.

But we have been talking about these three forms of degenerative disease *after they have got started*. What about warding them off? There's a good chance that they will never trouble you, if you will heed the rules.

The first of these is, have every possible source of infection removed. It is known that the bacteria which lodge in teeth, tonsils and nasal cavities, and in other localities about the human body, may give rise to these particular ailments as well as to many others.

Heart, blood vessels, and kidneys may all be poisoned by the infection of these bacteria, and serious disease may result. Let your dentist and your throat specialist decide whether teeth or tonsils should be removed, and don't let them remain a single day if they are sending forth poison into your system. On the other hand, don't let any dentist or physician who is rabid on the subject be your adviser. Consult a soundly conservative specialist, for teeth yielded up can never be brought back, and there has been a tendency to overdo this treatment—a tendency, we are happy to say, now on the wane.

The second rule is, live so wisely that disease can't get in past your barricade of sound habits. Cut out all excesses, whether alcohol and tobacco, or mere tea and coffee in extravagant quantities. Eat sensibly, that is, in abundance but never over-abundance. Many men as they advance in life—women, too—keep up heavy eating, although they do not need food in such quantity as the growing boy or girl. They eat too much meat, too much greasy food, too much highly seasoned and extremely sweet food. They get the habit of dropping into a restaurant between the regular meal hours, and their weight keeps on increasing until it is a burden to carry with steadily softening muscular strength through want of exercise.

Keep up exercise, even into middle age and old age. Why not? Think you are short-winded? That's probably because you are too heavy, or have eaten too big a dinner, or simply because you have been lazy. Try it again, and you will breathe better next time. And the next time, better yet. Try again. Keep it up. Get down to normal weight—or better, keep down. Never let your weight get ahead of you. It's an Old Man of the Sea.

Over-exercise and over-work if they are carried to the point of exhaustion may be harmful. However, they are less frequent than people suppose. It is worrying about the work, not the work itself, that usually does the harm. Stiff exercise may make you tired at the time, but a good night's sleep will take away the fatigue as a rule.

Emotional strain, on the other hand, wears on the human mechanism badly. Worry, quarrelling, depression, friction will "take it out of you" to the extent that these slow-creeping, degenerative diseases are considerably hastened by a chronic mental ill-health. Undue excitement, lack of sleep, strain in the work caused by anxiety, all contribute to the work that the disease is doing to undermine you. Fight for a steady mental poise; it's worth fighting for.

Here are two daughters, nice girls but sort o' helpless.

Summed up, the factors that develop these degenerative diseases are:

Chronic infections, usually arising from bacteria in teeth, tonsils and other spots. These can be corrected by removing the cause; and by keeping the eliminations thorough. Drink plenty of water, to flush out the channels; and keep the bowels open.

Over-eating, which leads to overweight.

Over-use of stimulants, including alcohol, tobacco, tea and coffee in excess.

Lack of exercise.

Overstrain in work, anxiety, physical exercise, or any other way which leaves a sense of exhaustion. Loss of calm poise.

The social evil.

There you have the whole matter in a nutshell. If you will keep that nutshell before your eyes and mind, and heed what Dr. Frankel has to say below, it's a good wager that you will be young as long as you live—and live longer.

Dr. Lee K. Frankel of the Metropolitan Life Insurance Co. made this statement in an address on the "Economic and Sociological Aspects of Public Health," before the U. S. Public Health Service:

The physician of the new era will not only treat and cure disease but will greatly stress its prevention. There will also be the education of the public itself. Without the heartfelt co-operation of the public, progress will be impossible. The value of periodic health examinations must be ingrained at the earliest moments. If we can combine the efforts of the trained and enlightened health official, the trained physician with a conception of the preventative side of medicine, and the intelligent, educated citizen for a common end, all understanding the value of discovering disease in its incipiency through careful, exhaustive and scientific examination, we shall have taken the next great step in the lengthening of human life.

How to Kick

By

George H. Brooke

Straight Swing Spiral (6 illus.) Receiving ball from centre

THIS article on kicking a football is written for the schoolboy athlete who is ambitious to become famous on the gridiron.

In order to take up the subject in a logical manner we will treat it under the following divisions: First, what good kicking means to a football team; second, the possibilities for the ambitious boy; third, the scope of the kicking game; fourth, ideas as to practice and training; fifth, the technique of the various kicks.

The importance of the kicking game to the success of a football team is such that when a coach looks over the mass of eligible candidates that come out for the team he will immediately and especially pick out the kickers who show real ability.

Getting ball in position while taking first step

About to drop the ball for spiral. Ball should be dropped from even higher position

who read this article are going to play and if you are ambitious to do the team, perhaps some of the hints I will to be of as- you to make

So, if any of you football this year, kicking for your give you will prove sistance in helping a name for yourself. your magazine about you have two or pos- weeks before the first didates.

If you get August 25th

kicking twenty to utes a day for three when you report you big start over your have no football of you can easily get one by applying to the coach tain of your team. If possible enlist the ser- friend who is willing to help out by doing the and thus give you the necessary practice in re- ball.

sibly three call for can-

Practice thirty min- weeks and will have a rivals. If you your own or the cap- vices of some "passing" ceiving the

rule, which has just gone into force, requiring point to be scored after a touchdown from has put an added premium on accurate drop ment kicking. Several important games were this way last fall.

The new the extra scrimmage, and place- decided in

pion Princeton teams of have shown the possibili-

The cham- recent years ties of the

a Football

Former Fullback of U. of P. and later Football Coach of Swarthmore College and U. of P.

Finish

importance of good kicking, and the taking of tactical advantage of these possibilities. Putting and punting until the moment is ripe to strike home hard has won the Tigers many a hard fought battle. On the other hand, many teams have lost through poor kicking, and through not using a good kicker properly when they had one. A really first-class kicker is not only a continual threat to the other side, but he helps to make more effective the general attack.

The advantage of having on a team a sure kicker who is good for a steady distance in punting, and who at times is capable of getting off a brilliantly long or well placed punt, cannot be overestimated. He not only gets his side out of danger and trouble, but he often puts them within striking distance of goal. In fact it is safe to say that more contests have been decided on good kicking than any other one branch of our great college game.

Ball dropped—undoubtedly will be hit too close to ground

The possibilities of a first class kicking game are really almost unlimited provided the kicking ability is there, and the coaches and field generals only realize and take advantage of these possibilities. Nowadays there has arisen the specialist in the various kinds of kicking. In the preliminary practice before the daily scrimmage at any big university you can see one school practicing punting; another bunch down near the goal post shooting drop-kicks; another at placement-kicks, and still another trying long-distance place kicks, like the kick-off, or after a fair catch well out in the field.

Stepping with left foot

This specialism opens up the possibility for the schoolboy to learn at least one type of kick that will make him valuable to his team. There is a case on record where a man was sent into a game for one minute only, and by means of a drop-kick won the contest. It was

Kennard of Harvard. He was immediately taken out after he had made the goal, but not before he had become famous.

My own general experience in kicking and coaching over many years has shown me that in the long run the short-legged player is apt to be a more accurate drop-kicker for short distances than the man with the longer leg. Therefore it is perfectly possible for schoolboys of any build physically to learn to be valuable as kickers.

If the schoolboy starts his football career with the determination to learn to be a first-class kicker he has just that much better chance to make his college or university team later on, and also to make his name famous in football history. When the very small lad at school first goes out to play football with boys of his own size his career has begun. From then on his development is just more or less haphazard, or it is the result of intelligent efforts directed toward a definite object. If he has natural ability, think how much more success he will have if he develops this natural ability along a well directed line of gradual development.

Some men have succeeded because of natural ability and in spite of haphazard methods, but it is perfectly possible for any boy without natural ability to succeed by reason of his very determination to develop himself along the proper lines. In fact sometimes he will make a better man in the long run than one with natural ability. So much for the possibilities.

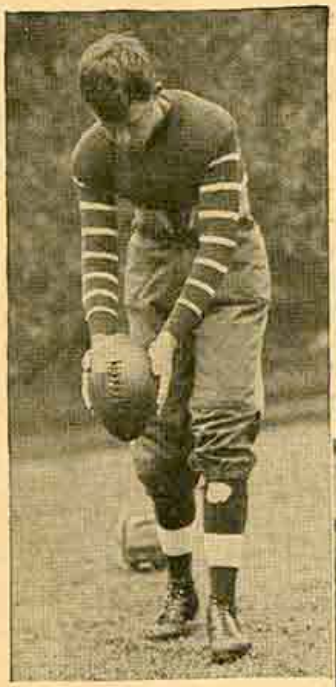
Now we come to the scope of the kicking game, for it is well to know the requirements and limits of the goal of our ambitions.

The scoring of field-goals is more or less fixed as to scope. There is only one thing to do and that is to send the ball over a fixed object. On the other hand, the scope of punting is almost unlimited, and there has never yet been a punter who has truly attained this limit. Very few of the finest kickers know exactly what kind of a punt to use under varying conditions. The field is like a checker-board and there is a certain move for every position in that field. I have seen men who could kick long, high, beautiful balls, but who could not place the kick where it would be most effective. This is a splendid type of punt from certain positions in the field, but it's not used properly when you send the ball over the opponent's goal line. This only means that they can bring it safely out to the 20-yard line.

A punter must instinctively use his own judgment because he gets no signal as to where or how he shall kick. For instance, he may be near his own goal, and close to the side line, kicking in the teeth of the wind. What real ability he has is brought out in just such a situation. In one of the most important games of the season I saw a so-called first-class punter send the ball out of bounds with a seven-yard gain only. I give this just to show what the scope of

Place kick. Toe hitting ball too low

Place kick. Toe hitting ball correctly



Second step drop kick

first-class kicking means.

We will now take up some ideas as to training and practice. Any average schoolboy by proper training methods over a number of years can develop enough physical vigor and nervous force to make him eligible for any first-class football team, provided that with this development he also cultivates real skill in the kicking game. All schools have trainers and coaches who will show a boy how to develop physically. It is then all up to his own determination. If he is ambitious and looks into future possibilities he can acquire this determination.

There is one point, however, which I want to warn against, and that is the kind of training which makes a man muscle-bound. It is an absolute essential of good kicking that the players have wiry, flexible muscles. The timing of the blow and the speed of the foot are prime elements in good kicking. Without flexible muscles they are impossible.

There is one set rule as to the length of the practice in kicking, and that is this: Never continue after your leg is tired. On the other hand, play it safe and stop before the least feeling of fatigue in the leg. Always start practice by getting off short kicks, having regard for form rather than distance. In this way you get your muscles limbered up before you put them under strain.

All branches of kicking require the utmost coolness in execution. The way to get this coolness is first to acquire confidence. Confidence can only be acquired by practice. The more practice the more confidence. Therefore the sooner the schoolboy begins to learn to kick and to practice intelligently, the better chance he will have of becoming a great kicker during his later career.

Intelligent practice predicates kicking under as near "game conditions" as possible. The learner should always have some one passing the ball back to him in the way he gets it from the center during the game, and before the afternoon is over he should have some one hur-

Finish of drop kick, bad form, hands should be on either side

Good form drop kick —ball leaving foot

Correct position. Side swing spiral

There are two distinct types of punting; one is the high twisting or spiral kick, which is supposed to rotate on its axis like a rifle bullet; the other is the low drive or sailing kick. In both the object is to make the ball travel with the least resistance from the air.

There are two schools of punting. One uses the upright swing, and the other the side swing. Great success has been met in both schools, but I believe the side swing is better adapted for short-legged kickers especially, and further that it develops a harder blow of the foot, largely on account of the slight additional leverage and stronger body punch made possible.

The kicker should stand with both feet on a line parallel to the rush line. He is thus in a better position to handle a possible bad pass from the center rush. He should catch the ball in his hands with fingers outspread and fairly close to his body. Next, a short step with the right foot, and then a longer, but comfortable, step with his left foot. As he steps he drops or tosses the ball and swings. It is a bad fault to make any more steps

Side swing punt. Receiving ball from centre

Adjusting ball and short first step with right foot

rying him and forcing him to kick at about the same speed required in an actual game. He should practice with the wind and against the wind, near the side lines and at various places in the field. If he is near enough to punt over a goal line, he should practice either sending the ball high in the air so that it drops near the goal, but not over, and hard to handle. He should literally practice hours and hours in driving the ball out of bounds close as possible to the goal line

There is entirely too much haphazard practicing of punting anywhere around the field. It is a great art in itself, and there should be absolutely no time wasted in developing other than along the lines which really count in the actual game. Winning or losing so often depends on making exactly the proper kick.

The technique is such a broad field that I can only attempt to give a general idea of the way to make the various kicks.

We will first take up punting.

than these, because he is not only hurried more, but more apt to be blocked. The kicker must realize that it is not any movement forward of his body which gives the power of the drive. It is rather the timing of the blow, the meeting of the ball properly and the speed of the foot. The sooner he realizes this the quicker he will get out of any bad habits of stepping too far forward. The more hurry the less chance for control.

It is absolutely important that the instep of the kicking foot should be entirely extended at the instant of impact until it is rigid, otherwise the instep will give and the result will be inaccuracy and loss of power. There are many kickers who develop what is known as a "bad hook." This is caused by trying to get rigidity with the foot unextended.

In the upright swing the ball is held at arm's length, straight up in front of the kicking leg, at a height slightly above the waist. As the foot comes up it is dropped by separating both hands instantaneously slightly across the foot, with the outer end on the inside of the foot. It is met squarely with the instep just back of the widest bulge of the ball, and high or low from the ground, according to the height to which the ball is to be driven. The finish is with the foot as high as the head.

About to toss ball for side swing punt

Side swing spiral finish (poor)

Side swing spiral finish (good)

In the side swing punt the kicker's first step is to the right, 45 degrees off the line of intended flight. Instead of dropping the ball as in the twisted kick, he starts it from about waist high and gives it a little toss or flip out in front of his kicking leg. The ball might be said to have started on its way when he flips it, and the impact of the foot simply helps it along. As a matter of fact, however, the ball is almost floating on the air at the moment of impact. It meets the foot in practically the same position as in the twisting kick. This is the side swing spiral kick.

We now come to the so-called "sailing" kick, above referred to. This can be only properly made with the side swing. The ball is tossed en-

(*Continued on page 90*)

The Fore-Arm and Wrist and How to Develop Them

By B. H. B. Lange

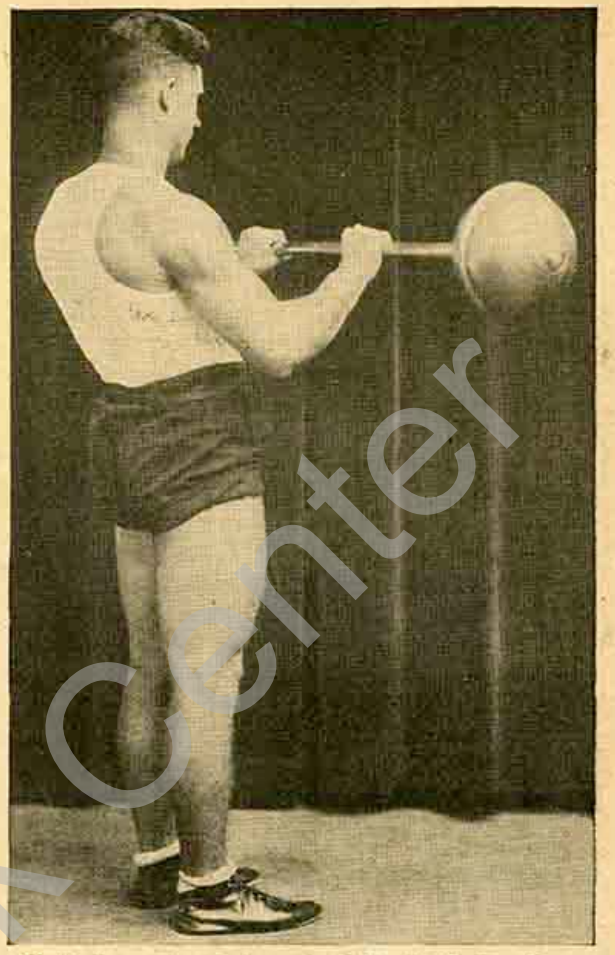
Formerly Director of Physical Education, University of Notre Dame, Notre Dame, Indiana

Let your arm hang by your side, grip the handle firmly, and then bend the wrist first inwards and then outwards.

WHY is it that so very, very, few men possess well developed fore-arms? Why is it that in most, in practically all, of the courses of modern physical culture, only the most elementary and rather inadequate exercises are prescribed for fore-arm development? Somehow or other it seems to be a generally accepted notion that the fore-arms are, next to the calves, the hardest muscle groups of human anatomy to develop. Perhaps in that notion, or because of that notion, lies the answer to the above query. It is the writer's opinion that because the fore-arm muscles of most men are more or less accustomed to a certain amount of the same day-after-day kind of hard work (without varying or increasing that work) most men acquire fore-arms of a certain size, and no larger. Unless any muscle or muscle-group is very gradually *compelled* to do just a little bit more work after it has grown accustomed to a certain kind, and a certain amount of work, said muscle or muscle group *will not* develop any farther. It is because the fore-arm muscles are daily subjected to this certain amount of hard work—varying according to the occupation of the particular individual—that these fore-arm muscles, since they are not called upon to perform different and still harder tasks, that these muscles reach a certain limit of development—imperfect development—and no more. If a man—no matter what his occupation may be—would spend five minutes daily in practicing a few of the exercises about to be described in this treatise, he would then acquire a well-balanced fore-arm development. It is to be remembered

that there are two chief reasons why only mediocre fore-arm development is attained: *insufficient* fore-arm exercise and *not enough variety* in fore-arm exercises. Do just a little bit more, and do it in more different ways and your fore-arms are bound to be fully and properly developed.

There are surprisingly few well-developed fore-arms. By this assertion is meant fore-arms with a circumference of twelve inches or more around the largest part of the fore-arm, measured while held in the straight position with the hand clinched. When it is remembered that a really well developed fore-arm should measure about one and seven-eighths times the wrist circumference, it is then that an idea can be had as to the real size and looks of an ideally perfectly and fully developed fore-arm. It is nothing unusual to see a young man or an older man whose wrists have a circumference of perhaps seven or seven and a quarter, or seven and a half or more (even as much as eight inches) and whose fore-arm measurement at the largest part will not even come up to eleven inches. A fore-arm no greater than that will always look thin and undeveloped. The radius and ulna, the two bones comprising the framework of the lower arm, are rather heavy and unless they are well covered with muscles they will naturally give the forearm an unbeautiful appearance, the more so in the case of young men who are naturally heavy-boned. Then too it is well to bear in mind that it is chiefly the upper two-thirds of the fore-arm that is muscular, while the lower third, and especially the wrist, is in most part made up of tendinous tissue. These tendons, or cord-like tissues, bind or fasten the ends of the muscles to the bony framework of the arm and wrist, etc. In the structure of the fore-arms, very especially the lower or wrist portions of the fore-arm, the tendinous and cartilaginous portion is the greatest component. That is why all men possessing perfectly developed fore-arms and strongly knitted wrists, have fore-arms that appear to bulge suddenly a short distance above the wrist instead of quietly and gradually sloping from the wrist. In such an arm the greatest circumference will be found at a point between two to three inches below the elbow.

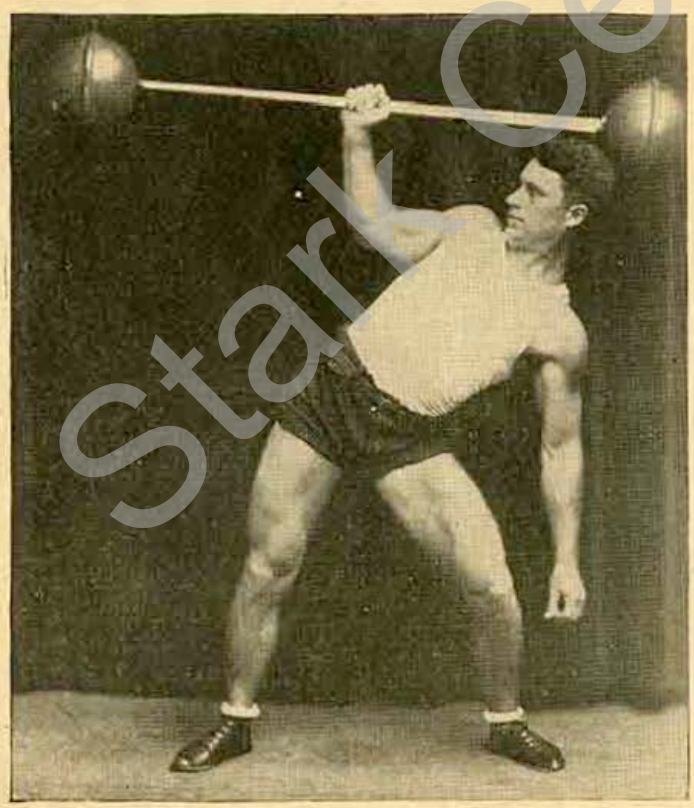


"Curling" a moderately heavy bar bell with the knuckles up, is the best exercise to develop the muscles on the outside of the forearm.

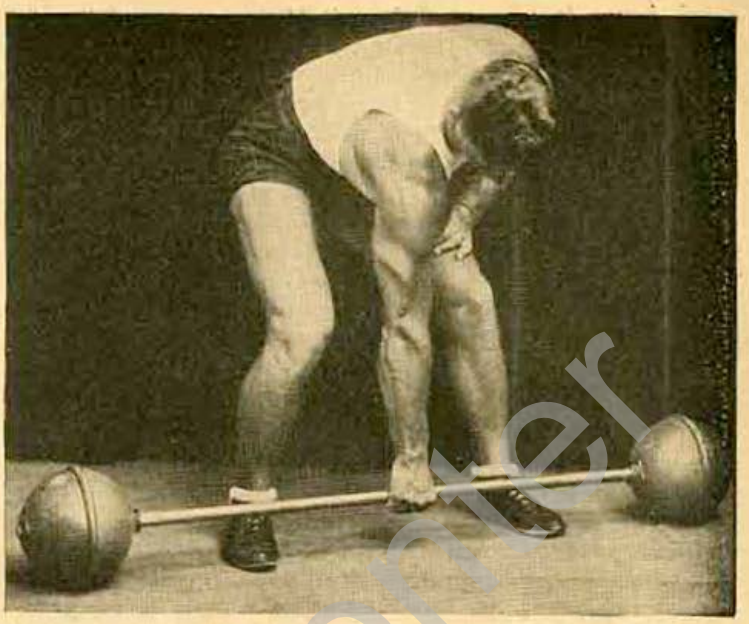
The muscles of the fore-arm may, in general, be divided into two classes:

First, those that flex, or bend the wrist, hand and fingers, and that pronate, or bend and turn, the palm of the hand downward; these are located in the inner and front part of the fore-arm. Secondly; those that extend, or straighten, the wrist, hand, and fingers and that supinate or bend and turn the palm of the hand upward (that is, toward the front); these are situated on the outer and back part of the fore-arm. These facts should be remembered by anyone desirous of developing and possessing a good-looking, strong and healthy fore-arm. Merely and solely flexing and extending, bending and straightening the hand, opening and closing the fingers, will develop an all around perfectly shaped fore-arm, because these just mentioned actions involve the flexor and extensor muscles chiefly without greatly using the pronator and supinator muscles which turn the wrist and hand downward or upward, to the right or to the left. It will be very evident therefore to the young man wishing to possess a properly developed fore-arm that he must make use of such exercises that will provide sufficient variety for, and that will call into play, all the muscles of the fore-arm, and not just those that cause the fingers to open and close.

The writer had practiced numerous exercises for a number of years and had acquired a certain degree of fore-arm development but after having reached the point where his fore-arms measured eleven inches he tried in vain to increase their circumference beyond that size. Then after a faithful study of the various muscles together with their actions and insertions, he discovered that only about half of the fore-arm muscles were actually and properly used. This implied, rather obviously, but one method of procedure—vary the exercises and use all the muscles of the fore-arm. The exercises that will be described in the next few paragraphs are the ones that increased the writer's fore-arm circumference from eleven to almost fifteen inches—their present measurement—within three years time. This increase in the size and shape and strength of the fore-arms brings about a corresponding increase in the strength of the wrists, although it has very little effect upon the size or upon the shape of the wrists since the structure of the wrists is largely tendinous, cartilaginous and osseous.



In making a "bent-press" you must keep the lifting forearm perpendicular to the floor, and just at this point in the lift the forearm muscles get the work that develops them.



In the "snatch" you toss the bell in one motion from floor to overhead. At the start of the lift the forearm gets vigorous work.

In the treatise on developing the biceps muscle there is described an exercise known as the "two-arm curl." This exercise prescribes that the youth doing the curl should take a moderately heavy bar-bell—in case of a beginner, one of about twenty-five or thirty pounds weight—and grasping the handle with the hands about shoulder-width apart and with the hands supinated, that is palms turned upward, he should slowly curl or bend the arms at the elbow until the bar-bell handle touches, or is close to the chest; then lower slowly and repeat about ten times. This should be performed every other day for four exercise days. Then the repetitions should be tried eleven times for four exercise days; then it should be increased by one, that is the exercise should be performed twelve times for four exercise days; then thirteen times for four days, and so on until the performer is able to make twenty repetitions for four exercise days. Then the weight should be increased by five pounds and the same course carried out as was just described. During this exercise the important point to be remembered is that the wrists must be kept turned up throughout the entire performance of this exercise as this has a decided developing effect upon the supinator and flexor muscles of the fore-arm and upon the tendons of the wrist.

Men and boys interested in body-building have become familiar with the names and figures of men like Sandow, Carr, Massimo, the Nordquests, especially Joe; Neaubauer, Saxon, Inch, Jowett, Hackenschmidt, and many others. These men together with the accounts of their deeds and their pictures, have been given to the public, at various times, in the pages of STRENGTH magazine. These men are cited by the writer as being but a few of the many that have acquired perfectly formed and superbly developed fore-arms and strongly knitted wrists. The exercises they have used must have been worth-while since the men that used them are living proof of their efficacy. The writer has tried all of these exercises and personally knows their worth. They are the only exercises that will give a young man perfect fore-arm development. They are, as has already been stated, the exercises used by the writer to develop his own fore-arms from eleven inches to almost fifteen inches in three years time. The fore-arm muscles of Joe Nordquest, Massimo, Hackenschmidt and Jowett are positively Herculean in size and strength. These men are all large-boned by nature which rendered possible the attainment of such large fore-arm development. It is almost an impossibility for a man with

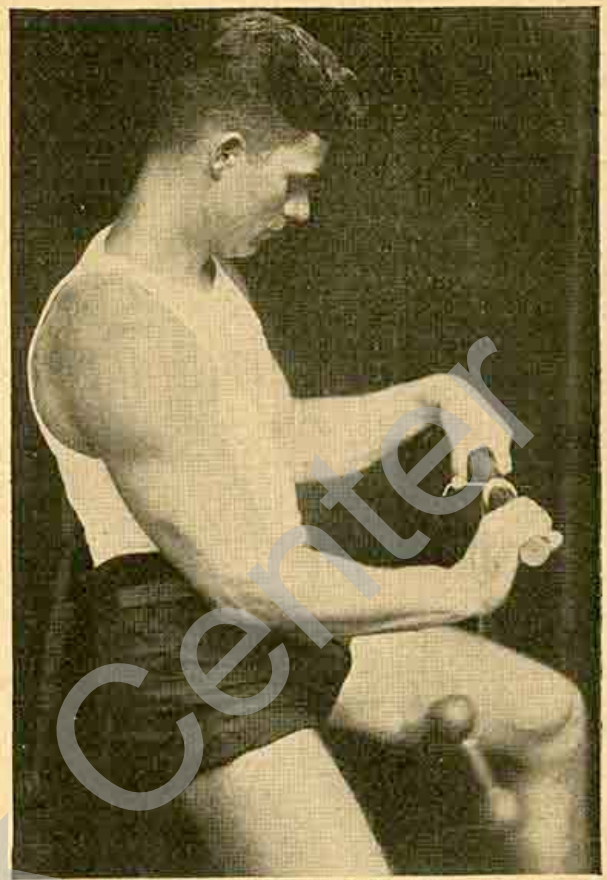
small bones to acquire extremely large muscles. That is to say, muscles all out of proportion to the size of their bony framework. Nature, let it be unforgotten, is the artist, architect, draftsman and designer supreme. If mankind would live as Nature's law intended mankind to live then men and women would be really, healthy, truly strong and wondrously beautiful. Mankind, in spite of its superior intellectuality is far inferior, materially, to the rest of what mankind terms "Nature." Freaks of nature are not freaks of nature—they are freaks of man, they are bits of nature distorted by man and man's notions as to the way humans, lower animals and plant life should be. Right living, sane living and living as nature intended beings to live will never produce "freaks." And it is especially true in the process of body-building, of muscle-developing. Accordingly it is reasonable to say that a young man whose wrists measure six and three-quarters inches in circumference cannot acquire or develop fore-arms as large as a young man whose wrists measure seven and three-quarters in circumference, and still possess true natural beauty. Nature puts a limit to all her plans. It is more natural for large bones to be covered and to be moved by large muscles, than it is for small bones to be covered and to be moved by large muscles, just as it would be more unnatural for large bones to be covered and moved by small muscles and for small bones to be covered and moved by large muscles. It is simply the old principle of true harmony again.

To return to the exercise called the "two-arm curl." As was described in a previous paragraph when the two-arm curl is practiced with the bar-bell grasped with the hand supinated—palms turned upward—the outer and back part of the fore-arm is developed and when the position of the hands or grip is reversed—that is, when the hands are pronated—palms turned down—then the inner and front part of the fore-arm is developed. This last method of performing the curl is named the "reverse curl." The reverse curl is somewhat more difficult than the regular, or palms up grip, curl, but it produces startling results.

In every well-equipped gymnasium will be found a piece of apparatus known as the "wrist roll." This is, as its name implies a piece of round wood so arranged that a series of weights may be raised to various heights from the floor, by means of a pulley attached to the wall some ten or twelve feet from the floor through which pulley runs a rope attached at one end to the weights while the other end is attached to the roll. As this roll is turned or rolled around and around either from the operator or toward the operator with a turning or twisting motion of the wrists alternately, the weights are raised upward. A few repetitions of this exercise give the operator the impression that his fore-arms are about to burst. In using an apparatus of this sort the writer has found that in order to get the best results it is best to roll the roll first from the operator, then toward the operator, using in both instances the hands with the palms turned down; then it should be tried with the palms of the hands turned up. However, since it happens that every young man cannot, for various and other reasons, always find it convenient to use gymnastic apparatus, there is another very efficient method, the use of which is possible to every young man. A round piece of stout wood, about an inch and a quarter in diameter by about two feet in length will make a good wrist roll. A small hole should be bored through the middle of the stick through which should be passed a stout piece of heavy twine about three and a half or four feet in length. A weight, five pounds is sufficient at first, should be fastened to the other end. Then holding the stick out in front of himself the operator should, with as complete a twist or turn of the wrist as possible, turn or roll the stick away from him until he has rolled the weight up to the stick.

Then he lets it run out again to the floor and again raises it, this time turning or rolling it toward him. In both these motions he should use the palms down grip. Faithful practice of this simple exercise will be rewarded with real results.

For developing uniformly symmetrical fore-arms the muscles must be given work that will use them in every conceivable manner. The following exercise is a most beneficial as well as efficacious method for achieving that end. A kettle-bell is the best kind of an apparatus to use as the constructive nature of its handle renders it easiest to use. The weight used should be about forty pounds for beginners. It is best to exercise one arm at a time as this permits easier and fuller concentration on the muscles employed. Holding the weight in the right hand, the arm hanging naturally at the side, the athlete should turn or twist his wrist and fore-arm slowly towards the right, or outwardly, then towards the left or inwardly, as far as possible, and all the while he should keep his upper-arm as stationary as possible, thereby putting practically all of the work on the fore-arm muscles and wrist tendons. Ten repetitions are enough to begin with and the same schedule, as outlined above in describing the curl, should be followed until the athlete is able to perform thirty repetitions. The left arm should be made to perform the same work, the same number of times.



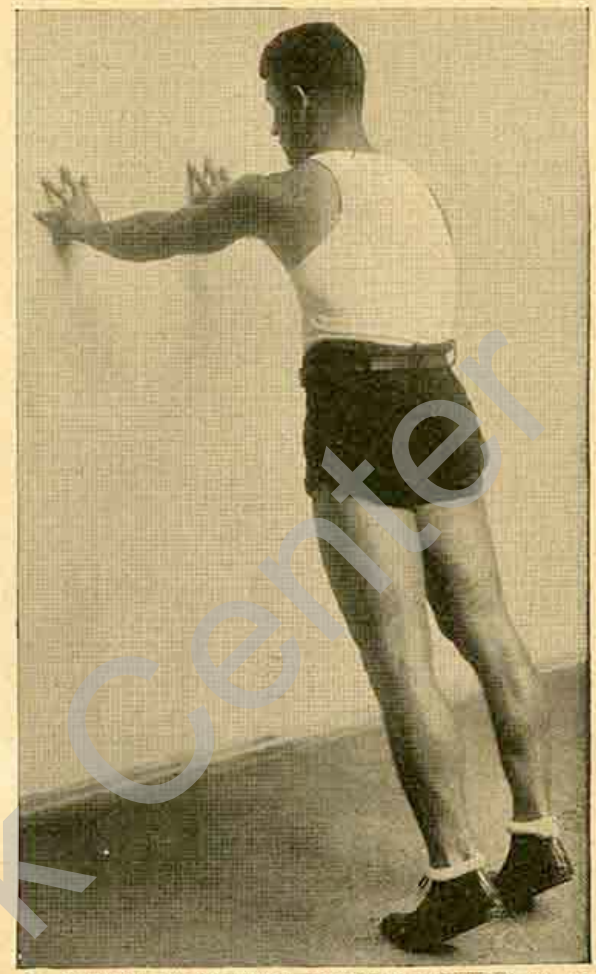
5. "Winding-up a weight" on a wooden roller. All the work is done by the muscles that control the wrist.

In the treatise on developing the upper-arms mention was made of that great lift known as the "Bent-press." The practice of this lift produces quite a decided development of the fore-arm muscles as well as serving to greatly strengthen the wrist. For the purpose of emphasis, and at the same time to explain this great lift for the benefit of those unacquainted with it, it has been thought best to describe it briefly. A bar-bell, because of its longer handle, is more suitable for this lift than a dumbbell. Sixty-five or seventy-five pounds is weight enough to use at the start, because a light weight makes possible the acquiring of the correct form more readily than a weight heavier than that. When the lift is to be made with the right arm the left foot should be placed about ten to fourteen inches to the left and rear of the right foot. This distance is to be varied accordingly to the leg length of the lifter. When the lift is to be made with the left arm then the position of the feet is reversed. The athlete stoops over, grasps the bar-bell exactly in the middle with the "palms upward" grip,

right hand. The left hand is placed under the right to help pull the bar-bell to shoulder height. Once at a shoulder height—the left or the non-lifting arm is to be held in straight out at the side from the shoulder to help maintain the body balance. The writer uses this method always, as it has given him the maximum amount of benefit. Here is the point at which the fore-arms and wrists receive their share of exercise. The lifter should now slowly turn the bar-bell until the handle is parallel to the shoulders; that is, in such a position that the hand holding the bell will face, palm toward the front. In order to achieve this position correctly the lifter's right elbow and the triceps or posterior part of the upper-arm will have to rest against the latissimus dorsi muscle—the large muscle that is found under the arm pits and that covers the shoulder-blades. This position gives the lifter a sort of brace or rest. Next, he should slowly bend or lean towards the front, and opposite side of the pressing or pushing arm, and while so doing he should slowly press or push up, always keeping the elbow from being forced in any direction but straight upwards and it is here, just this powerful effort required to keep the elbow steady, that this lift, the bent-press, so greatly helps to develop a powerful and well-rounded fore-arm. As the lifter leans or bends to the front, downward and sidewise he, at the same time is continually pressing upward and endeavoring to get his arm straight. When that is done and he has also straightened his body, then the lift is complete. The bell should be lowered as slowly as possible and if this is done without the aid of the other arm a man will develop unusual arm strength and development. The writer has slowly lowered one hundred and fifty pounds without the aid of the free arm, simply by constantly trying to lower the weight with one arm from the completed bent-press position down to the shoulder-height position. But care should be taken lest the arm let the weight slip. The lifter should always keep his eyes upon the weight and always have the unoccupied hand and arm ready to lend aid if needed. Practicing this bent-press about three times with each arm every other day until the athlete is able to handle sixty-five or seventy-five pounds easily may then be followed by an increase in weight of about five or ten pounds with additional increases as the athlete progresses in skill and strength.

There is nothing that will develop a strong sure grip quicker and better than the practice of the "one arm snatch." More over this particular lift, because of its nature in demanding quick powerful contractions of the fore-arm muscles, the flexors of the fore-arms, is doubly valuable therefore as a fore-arm developer. It is true that the one arm snatch is a developer of other muscle groups, but hat feature will be considered specifically when treating these other muscle groups. Briefly, the snatch is performed as follows. The beginner should use a light weight bar-bell, about sixty-five pounds will be sufficiently heavy. The bar-bell is on the floor in front of the athlete. He should have a piece of tape around the middle of the bar-bell handle as he must grasp the bell exactly in the middle. When the snatch is to be made with the right arm the left foot should be about four or six inches in advance of the right foot, and when it is to be made with the left arm then the right foot is that distance in advance of the left. The athlete now stoops over and down by bending his knees and very quickly, very suddenly and very simultaneously grasps or snatches the bell from the floor and raises it aloft above his head with one sweeping motion of the arm together with the added impetus of his straightening legs. This should be repeated with each arm three times. As skill and strength develop more, weight in jumps of five or ten pounds should be added.

One more very valuable, very important and very strengthening exercise will be described. The writer has used this exercise with remarkable success and results, not only for his own physical betterment, but also in prescribing it for football players, especially linemen, and for shot putters, javelin hurlers, batters and other forms of athletics wherein the wrist and fingers bear an unusual share of fore-arm exertion. The exercise is most simple. The athlete should stand facing a wall; his toes being about three feet from the wall. Holding his arms straight out in front of him with the fingers widely separated, he should fall forward against the wall, catching himself on the first joints of the fingers, and then spring back again using the fingers only as the repelling force. Each time he falls against the wall the athlete should vary the position of the fingers by turning the hands toward the right or the left, outwards or inwards. Repeat this till the fingers or wrists begin to feel the effects.



6. Professor Lange's special exercise for developing the gripping muscles in the hand and forearm.

These few exercises if faithfully practiced will soon reward any person with well-shaped, well-developed and powerful fore-arms; well-knitted, strong-tendoned and flexible wrists and last but by no means least, they will give the practitioner a set of fingers that can tear a deck of cards, bend and break horseshoes, bend nails; in a word, they will reward the youth with that distinctive characteristic of real, red-blooded manhood, fingers of steel and vise-like grip. When such a young man shakes a friend's or a newly-made acquaintance's hand, that friend or that acquaintance will know that he has clasped a man's hand and not, as is so often the case, a piece of slimy, clammy extremity.

Muscle building exercises, by reason of their effect in increasing bodily vigor, have a definite and undeniable influence on one's character. Medical examiners for life insurance companies test your grip, because it gives them a line on your muscular and vital energy. As you develop your forearms you will find that you will acquire more power to grip things mentally as well as physically.

A well-shaped and powerfully developed fore-arm always commands admiration for its looks, and respect for its evident power. A strong grip is an invariable sign of high vitality.

It's the Hips That Make the Figure

This article is written not for our men readers, but for the girls and women who are interested in the ideal figure; and that means every woman and every girl. When men exercise they do so in order to improve their health, or to get more muscular development, or greater ability as atheletes. But when a woman takes exercise she does so with but one aim in view; and that is to improve the proportions of her figure.

By David Wayne

WOMEN in some ways are much more clear-sighted than men, and it seems that they instinctively realize that if one has a perfect figure, one is almost sure to have perfect health. Also they properly hold to the view that beauty of figure is not a matter of size so much as it is a matter of proportion.

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It is possible to have a slender body together with most beautifully rounded arms and limbs. Slenderness is not so much a matter of size as of proportion.

Photo of Miss Eggert, the celebrated Californian Nature Dancer.

Women will, therefore, play outdoor games, or will join dancing or gymnasium classes, but not one woman in a thousand will ever go through a daily routine of exercises. For this she can hardly be blamed, because she associates the idea of exercises with the idea of "muscle," and no sensible woman wants muscles of pronounced development. She very properly considers that muscle, just as muscle, would be of no use to her, and she refuses to believe that muscle-developing exercises will either greatly alter her appearance or add to the beauty of her figure. Just the same, she wants that beauty of figure because to her it means—attractiveness.

Every now and then some magazine will publish an article on the ideal physical proportions, and usually they give a lot of charts showing the human figure with lines drawn across it, and information that the trunk of the body should be three times the length of the head, or that the whole figure should measure seven and one-half heads high, in order to be perfectly proportioned. Such rules may be of great value to artists and sculptors, but what good are they to the average young girl or grown woman? Suppose, for example, your head measures exactly 8½

inches from the point of the chin to the crown of the head (that is, your head is eight inches high). That means that you should be 64 inches in height to be in proportion. But suppose that you are only 62 inches or 66 inches, and that you are full grown without a chance of either increasing or decreasing your height. Does that mean that you have to abandon all idea of ever having a shapely, well proportioned figure, and that Nature has condemned you to remain in the ranks of the shapeless? By no means. Although the artists and the standard-makers may disagree, I hold that almost any young woman or girl can develop a beautiful figure no matter how many heads high she happens to be.

If we were to rigidly apply the artists' rules of proportion, we would find that only about one young woman out of every ten thousand could pass the test, and yet we have beautiful women by the thousands. I mean women not only with beautiful faces, but with beautiful figures. In fact, fine figures are far more common than beautiful faces. Go to any of the big bathing beaches and you will see at least a dozen beautifully-shaped young women to every one finely-built young man, and yet as a general rule the men take exercise and the women do not.

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There is a great difference between being thin and being slender. This lady, who is one of the Marion Morgan dancers, has the ideal slender type of figure.

BONES AND MUSCLES—THE BASIS OF OUTLINE

Ask any young woman to describe the ideal figure and she will say: "A round neck; smooth, sloping shoulders; rounded, tapering arms; a flat back; firm bust; small waist; trim hips, and shapely legs." You will note that she does not say a word about size. Young men devoted to exercise may have the ambition to get very wide shoulders, or a very large chest or very muscular arms, but a woman ignores all that. Great size and heroic muscles may add to the impressiveness of a man's figure, but they add nothing to a woman's. What a woman wants is "lines"; and by this she means not only smooth outlines of limbs and body, but also *a certain tapering proportion* from the shoulders to the waist downwards, and from the hips to the waist upwards. While a woman may not be able to explain exactly what those proportions should be, you may be assured that she knows them when she sees them. If you talk to a woman about "figure," "lines" and proportions, she will listen to you every time. If you talk to her about exercise and muscle, you will not hold her attention for long.

But after all it *is* muscle—muscle and

bone—which creates the outlines of the figure. As you probably know, most of the muscles are attached to the underlying bones some way or another, and the bones have protuberant or roughened ridges to provide for the muscular attachments. The bones of a man are heavy and thick and have pronounced ridges. The bones of a woman are lighter and the ridges are smaller, showing that they are intended to support smaller muscles. In men the muscles when well developed seem to almost project themselves through the skin, especially when the muscles are tensed. A woman's muscles do not show up in this way, because just underneath the skin there is a thin layer of fatty tissue which helps to cover up the edges of the muscles, and which imparts a pleasing roundness to the shape of the trunk or limbs. Every one of you knows that a woman may have a superbly beautiful arm without showing the slightest trace of muscle, and that in many cases if you were to take a cross section of the upper arm, it would show that the arm was almost exactly circular. This is due to the presence of the thin layer of sub-cutaneous fat. Every girl and woman, even the most slender, has that fat; and it is entirely different from the *surplus* fatty tissue which later in life invades the muscles and the abdominal cavity. When you find a woman or girl with a very shapely arm and an equally shapely leg, you usually find that her body is slender, which means that she is still muscularly active. As soon as a woman starts to become stout around the body, the shape of her arms and legs commence to deteriorate, because the muscles of the arms and legs are invaded by fatty tissue.

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A woman's hips should be almost as broad as her shoulders. When they are noticeably smaller, it gives a boyish appearance, as in this picture of Mlle. Mitty.

There are some people, both men and women, who are "naturally fat"; that is, they are plump, and every part of their body is what you might call "out-size." Such people do not suffer from their fat, and the fat does not entirely spoil their figures because it is equally distributed. Such fat is due to some peculiar action of the digestive organs, or of the ductless glands, and it is rarely that it can be modified, reduced or altered either by dieting or by exercise. Localized fat whether it comes from lack of exercise or from overfeeding, *makes its first appearance in the muscles which are least used.* In the corseted woman, fat first appears on the upper part of the abdomen; next it comes on the outer and upper part of the thighs just below the

hips, then on the outside of the upper arms just below the shoulder, and lastly on the back. As soon as a woman becomes stout around the body it becomes difficult for her to move about, and consequently she ceases to take part in any games or pastimes which call for the active use of the arms and the legs. Therefore, the upper arms and the thighs, which are deprived of their accustomed exercise, soon lose their beautifully rounded outlines and acquire pads of fat near where they join the body. The forearms and the calves of the legs frequently remain slender long after the rest of the body has become plump. You sometimes see women between 35 and 45 whose bodies, upper arms, hips and thighs have become immensely stout, and yet the forearms and calves of the legs are just about as slender as they were in youth. That is because the acts of walking and of using the hands keep the foreaarm and calf muscles in good condition. Later on I will say some more about the stout woman, but the point I want to make clear now is that so long as all the muscles of the body are active, *all* the lines of the body will be beautiful.

There are certain proportions of the skeleton that must be taken into account when you appraise a woman's figure. The pelvic arch (the hip bones) of a woman are much wider in proportion to the height than in the case of a man. In most well-proportioned men the hips at their widest part are just about as wide as the chest at the height of the arm pits, but a woman's hips are, or should be, wider than her chest. Some authorities claim that a woman's hips should be as wide as her shoulders, but a better rule is that a woman's hips should be as wide as her chest plus the thickness of one arm. Up to a generation ago fashion decreed that a woman should have an abnormally small waist in order to make a contrast with her hips and shoulders. The corset-makers of those days designed corsets which drew the body in at the waistline and which

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Fancy dancing is unquestionably the greatest of all figure-builders. Here is a pupil of Helen Moller whose dancing has given her a figure of the perfect "Venus" type.

threw the hips and the bust into undue prominence. Nowadays the pendulum has swung to the other extreme. The present slogan is "small hips" and the corset-makers have responded by producing girdles which compress the flesh on the hips, and which leave the upper body free. The consequence is that the present styles produce a *false* athletic type of figure. I do not know what started the movement. Some popular novelists

raved over heroines who had slight, boyish figures, and in a trice apparently every woman wanted to have a figure of that description. It seems that the idea is to look like a boy, though why, Heaven only knows. *Men* do not want girls and women to look like boys; they want them to look like what they really are. (Of course, as a sex, we are immensely flattered that you should want to imitate us even as to our figures.)

A WOMAN'S IDEALS

When a young man takes up body building exercise, he usually starts out with the idea that he must attain to certain measurements. He will work long and persistently in his endeavor to get a 16-inch arm or a 42-inch chest. A young woman is bothered with no such notions. Her ideal is a slender, youthful figure. The thin ones try to make their bodies smoother and rounder, but not necessarily bigger, while the stouter ones almost always try for a reduction of flesh. As a rule, women place a higher value on figure and vitality than on athletic ability. They instinctively know that *the signs of vitality are a graceful figure, thick, lustrous hair, fine teeth and a clear complexion.* I am inclined to believe that in evaluing these items they would place the figure last. It happens that the easiest way to get a clear skin, to preserve the teeth and to get a fine head of hair is to develop the figure.

A woman by virtue of her physical make-up has more strength in her hips, thighs and back than in her arms and shoulders, and for this reason the present tendency to subdue or minimize the size of the hips is a distinct mistake. We all realize that bulky hips are extremely unsightly, as well as being one of the first signs of passing youth. We can understand why a woman should try and preserve a youthful appearance by making her hips look as small as possible, but we wish to warn against the deterioration of the muscles of the hips and waist which will *inevitably* follow the wearing of girdles which cause too much compression of the flesh.

One reason why women place so little importance on mere size is because they have a very keen sense of the lines of beauty. They know that a young girl who has a slender ankle will look better if the calf of her leg is proportionately slender. Any artist will tell you that a light-boned girl with a 12½-inch calf can have just as beautiful a limb as a heavier-boned girl the calf of whose leg measures 14½ inches. The same thing applies to the arms; providing the arm is well rounded, it can be beautiful, no matter what its girth. The roundness of a limb, either arm or leg, depends on the equal development of each and every muscle in that particular limb. So long as a girl or young woman is active—that is, so long as she takes part in vigorous gymnastics, in swimming or in games like tennis—she need not fear any accumulation of fat at the top of the arms or legs, and her limbs, both upper and lower, will almost automatically keep their beautiful outlines.

WHY WOMEN HATE EXERCISE AS SUCH

A woman is all for direct action. When she wants results, she wants them quickly. They say that when a man's hair gets thin, he buys a fair restorer, but when a woman's hair gets thin, she buys hair. Women apply this same principle to their figures. If fashion demands slender hips, instead of buying an exerciser, as a man would do, she does the easiest thing, and buys a girdle. If fashion puts a premium on extreme slenderness, she declines to sweat off the extra flesh by exhausting exercises, and, instead, she cuts down her food supply until she is almost emaciated. Women are very skeptical as to the results of exercises. If you tell a stout lady that she should do bending exercises to reduce her waistline, she is apt to get back at you and tell you that she has a washwoman who bends over the tub three hours a day, and yet gets fatter every week. It is a peculiar thing that women

who are so extremely painstaking and patient when it comes to mastering the necessary details of piano-playing, or singing, or painting, are at the same time so impatient when it comes to exercises. The same young woman who realizes that it will take three years of practice to perfect her vocal training cannot understand why it should take more than three weeks to perfect her figure.

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Mlle. Labas has the rounded body, and the tapering limbs that are so admired by European audiences.

THE EVILS OF DIETING

When a woman wishes to alter her figure to conform to the prevailing fashion she is usually more apt to resort to dieting, or even to the use of a drug, than she is to take up bodily exercise. A painfully thin woman sees an advertisement that some mysterious new food preparation, or some equally marvelous liquid, will add many pounds to her weight inside of a month. As a matter of fact, it is as easy to put surplus flesh on a thin person by stuffing them with a malt preparation as it is to make them grow stouter through drinking several bottles of beer or ale every day. The deluded woman buys the new preparation, and it must be admitted that frequently she *does gain many pounds,* but the extra flesh comes in the form of soft, shapeless, fatty tissue. What is worse, the effect of the food preparation is of long duration, and the thin woman who expected to gain 20 pounds sometimes gains 60 pounds, and her form is far more lumpy and unsightly than it was when she was ultra thin. The stout woman naturally hates exercise because it makes her hot, tired and red in the face. So she is apt to buy some weight-reducing drug, or to put herself on a rigid limited diet. If she is strong-minded to adhere to her dieting she may lose many pounds, but almost invariably instead of getting the desired slender and youthful figure she becomes haggard and drawn in appearance; her skin hangs in wrinkles, her complexion suffers and her figure is not nearly so pleasing as it was in her original plumpness. Instead of making herself more attractive, she is making herself less so.

THE CAUSES OF THINNESS

Every girl and young woman should be slender and if the average woman

takes enough varied exercise she can retain her slenderness until the time she is thirty-five. Many young women have such a dread of becoming stout that they systematically under-eat and in such cases no amount of exercise or right living will overcome the effect of the lack of nourishment. Other women are kept thin by reason of their extremely nervous temperament. Still others are thin by inheritance. There is however an immense difference between thinness and slenderness. Slenderness is entirely a matter of proportion rather than of size. A young woman can have beautifully formed arms and legs of considerable size and yet she will appear slender if her waist and hips bear no extra flesh. Many a young woman looks like a perfect sylph when in a street dress of ankle length, but when she dons evening dress she shows the beautifully rounded arms and shoulders of a Cleopatra, and when she is in a bathing suit she shows a pair of limbs of considerable size, as well as of remarkable beauty. No matter how good-sized are a young woman's upper and lower limbs, they will not appear *big* so long as they are perfectly shaped, and it must be remembered that perfect shape is possible only when there is a complete absence of localized fat.

"What every woman wants" is arms, shoulders and neck that are rounded without being too large and a satiny skin. Mlle. Potenski's shoulders command the admiration of all beholders.

THE CAUSES OF STOUTNESS

In the majority of cases a young woman becomes stout either through eating too many sweets or through lack of that kind of exercise which calls into play the muscles of the hips. Fat makes its approach in a very stealthy fashion. At the age of sixteen a girl will start eating candy or chocolate to excess, and up to the time she is twenty there is apparently no effect. But those four years of steady candy eating will make a change in the composition of her blood, and when she is twenty-one or so she will start to get plump no matter how much she exercises. That is, of course, if she continues in her excessive candy eating. The cure in such cases is not to take violent exercise, nor semi-starvation, nor a greatly restricted diet, but simply the abandonment of the candy habit.

THE WAY TO GET A PERFECT FIGURE

The easiest way to bring out the greatest

(*Continued on page* 86)

Judgment in Exercising

It seems to me that beginners and would-be physical culturists are everlastingly reaching out for a "Fountain of Youth" in the form of some type of exercise that will give them health and strength over night.

This searching, as you probably realize, is more foolish in them than it was on the part of the gentleman who originated this "wild goose chase." For Ponce de Leon was in a new land of which no one at that time knew the extent of its treasures. These present-day physical culturists have the advantage—knowing now how utterly he had failed in his quest; as well as the limitations of the new land and therefore should know better.

By Charles MacMahon

WE all know, generally speaking, that it takes quite a length of time to lose good health. In the majority of cases this process of losing health is so slow that we do not notice it until some time long after the decline commenced.

I think we are all agreed that it is much the easier matter to lose good health than to gain it. To attain, or even retain good health, we must do certain things and eliminate others. These restrictions are not as a rule easy-chair matters for the non-exerciser to perform (although he will be surprised, after exercising a length of time, how much of a pleasant habit the taking of exercise can become). But to *lose* our good health, all we have to do is really nothing. Or, in other words, the things that seem easiest for us to do are the things that are most liable to impair our health.

With these arguments settled, the point is, that we cannot expect nature to mend in a week what has taken us months and years to unconsciously tear down, and if it takes months and sometimes years to lose good health, why should we not be willing to spend at least months to regain it. Good health, abundant strength and pep are worth more of our time than a few minutes a day for a few weeks; and besides it is only a fair proposition with Mother Nature.

If we should lose a fortune with one spin of the wheel, we can at least hope

Fig. 1

to regain it in like manner. But in our try for better health, we cannot gamble—we cannot try this and that exercise once, discarding them one after the the other if they do not *give* us immediate good health—just as we might discard various games of chance that failed to return our lost fortune on one or two throws.

It has probably taken more words than was necessary to arrive at this, but here it is at last in a condensed form and don't dilute it for ordinary uses: First be sure to get a good set of exercises and then stick to them if it takes months and don't use your head as only an exerciser for your neck.

Decide which muscles of your physique, no matter how insignificant, need special attention in order to bring you up to your ideal. Then do the exercises that call into action these particular muscles until you get those deficient parts up to the point where they compare favorably with the parts you consider more or less perfect.

Most of us, in our haste to gain good health and great strength, naturally hurry our exercising, thinking I suppose, that the sooner we are finished with them the quicker we get health and strength—like taking four pills when two is a dose and expecting to get well twice as quick (if it is possible at all from pills).

That is why most of us want to get at the strenuous exercises first, thinking again, they will do us the most good, while in reality we are doing ourselves possible harm by taking the strenuous exercises right off the reel before our bodies have been put into condition by milder exercises and gradual progression.

Yes, there are longer and shorter, good and better ways to a hale and hearty constitution and physique, but there are no over-night methods.

Then what must we do to be saved from weakness and ill-health? We must prefer the slow and sure route and work hard if good development tarries on its way, but we should never exercise in a slip-shod, hasty manner. Remember the good comes from the doing of exercise and not from the mere finishing of them.

There are many men (both old and young) who are going through a routine of exercises which they have picked up here and there. A man who has not gone through physical training in most of its forms is liable to select a good exercise for the biceps of the arms and a poor one for the biceps of the legs,

Fig. 2

etc. Because in these self-training methods they do not have that great advantage of instructions from a competent teacher.

Of course, none of us can be expected to use our brains as well as our muscles while exercising until we have gone through a good course and learned at least the basic principles of developing strength and physique with a working knowledge of our own body and its needs. We can no more be expected to do this than would we in turn expect a student architect to design a building before he had learned enough about the rules of stress, strain and other necessary knowledge of this profession.

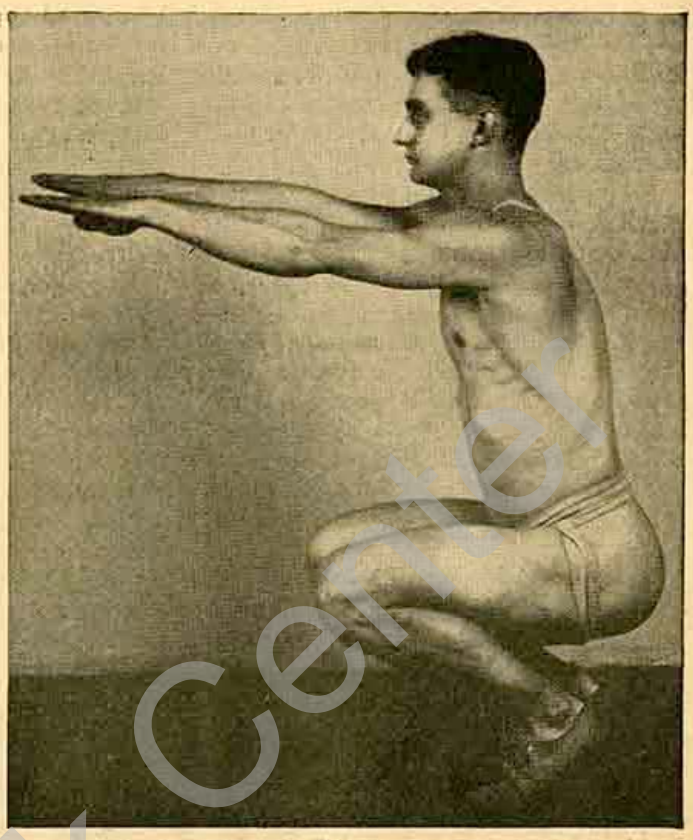

Fig. 3

In a foregoing paragraph I mentioned the fact that we should work hard in our exercising. This should be done and yet not overdone. We must learn just how much exercise does us the good. Too much exercise will give the body the overtrained appearance which is not desirable. We must not tear down our muscle tissue faster than nature can replace them. However, I am inclined to believe that very few physical culturists overdo their exercises. If we feel that we need to go harder at our exercises, then be sure you eat and sleep more, in order that the muscles may be sufficiently supplied.

If you do laborious work all day, you will not require quite as much exercise as if you were doing mental work. But here again, you must not fool yourself like many men do by saying, "Oh, I get all the exercise I need at work." You have all heard that remark. What they should have said to be right is, "Oh, I get all the work I need at the factory." That would be true as *work* is not *exercise* in its true sense.

Not even the strongest man would think of exercising for eight or ten hours a day. That is why few workers obtain a development that compares with a good physical culturist. Their minds are not on their muscles, the time is too lengthy and the work not progressive nor systematic as exercise should be.

To get down definitely to our title. If you haven't strength enough to perform the one arm chin and desire to acquire it, what are you to do? You can chin with two hands for years and yet never be able to perform it with

one. You can hang by one arm and try and try but still never acquire the additional strength to pull the body up in this feat. This is proof of how mere muscles fail without the help of the brains.

So putting the brain to work on this particular problem, you will first decide that the trouble is in the fact that from the two-hand chin to the one-hand is too big a jump for your present limited strength to manage. You then naturally search for intermediate steps and find that if you place the free hand on the biceps near the elbow of the arm that is going to perform the chin you can pull up your weight fairly easy. This position is illustrated in Fig. 1.

Now you are actually doing the one-hand chin so far as that one hand is concerned. That is, you now have a way by which you can give your arm almost the same exercise as if you were able to perform the one-arm chin properly. Now you have something to work on.

The jump from the two-hand to the one-hand has been materially shortened by this intermediate step, but still it is not short enough. So we must use our brains again and experiment in finding other steps that will make the task only slightly harder.

In order to think out any problem we must always first determine why a certain thing is difficult. And in the one-hand chin we will find that the length of the bone of the upper arm and the bodily weight are the two main factors against us. The bodily weight part of it can be readily seen, for any one knows that the heavier the body, the more strength the feat will require.

However, the main factor is that your weight is suspended from the extreme end of the upper-arm and the longer this upper-arm the more leverage there is present, and subsequently the more strength is needed. This is why a small man has a better chance of accomplishing the feat.

Now just why are we able to perform the one-hand chin easier when we place the free hand on the biceps of the chinning arm up near the inside of the elbow? Because when we chin in this manner we pull hard with the hand that is on the biceps, as well as with the chinning arm. This pulling with the off-hand throws the weight that is equivalent to the pull closer to the elbow and lightens the bodily weight that is on the extreme end of the upper-arm by just that much.

To illustrate this more clearly, suppose you were trying to one-arm curl two weights, and could not manage them. If you retained one of these weights in the hand as usual, and hung the other on the fore-arm somewhere

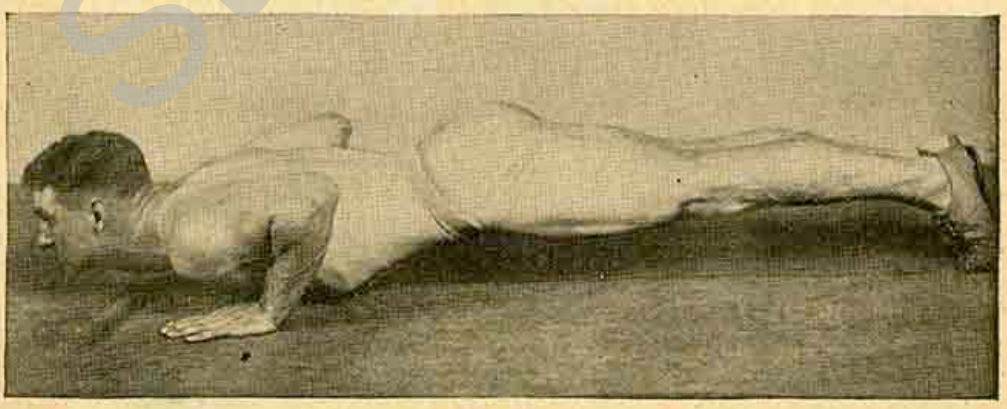

Fig. 5

near the elbow, then you could easily raise these weights—could you not? That is the principle I want to bring out in the one-hand chin.

Now that we know just what we are up against, we can readily see that the farther we move the hand from the elbow toward the shoulder, the nearer we get to the one-hand chin and the more difficult the pull-up becomes.

As strange as it may seem, you will find that with the free hand back as far from the elbow as the deltoids of the shoulder, you can come nearer doing the one-hand chin than you can in the usual manner.

I have also found that when trying the single-hand chin you can get help by placing the chin on the deltoid of the working arm and by pressing down as hard as possible as your body goes up. This gives you a sort of purchase. Try it if you do not believe it.

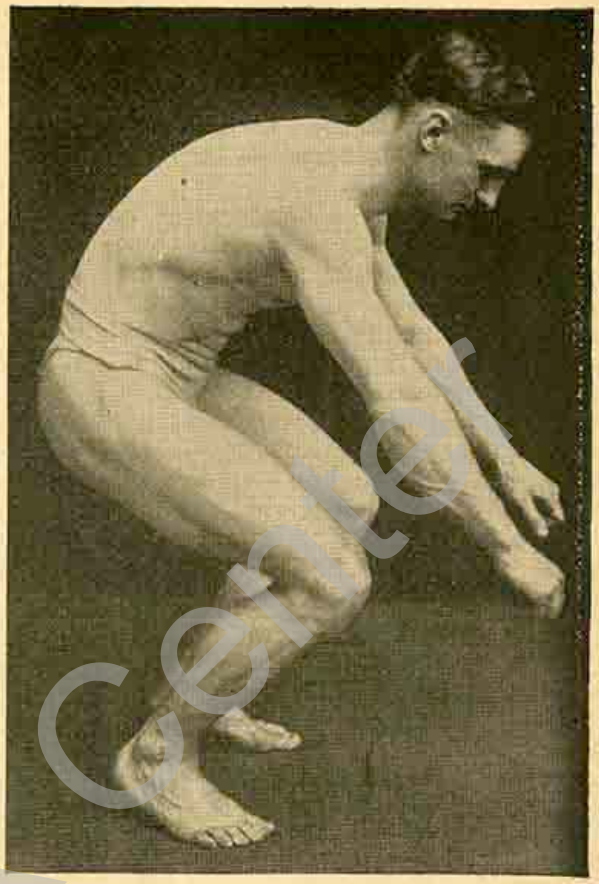

Fig. 4

It has been mentioned before in this article about a class of physical culturists who want to jump at the most advanced and difficult exercises first, and it was also pointed out how wrong it is. But there is also another class, and while just the opposite from the afore mentioned, what they do, or really what they do not do, is just as lamentable.

The people in this class have the unfortunate habit of trying to make their exercises as easy as possible. In doing this, they simply cheat themselves. For by eliminating the difficulties of exercise, they eliminate many of its benefits. I will explain just how this comes about.

Take for example the well-known exercise where you take a five pound dumbbell in each hand, hold the arms straight out in front of you, and then swing the arms backwards in a horizontal line. This exercise develops the muscles of the chest and the front of the shoulders as you swing the bells forward. As you swing the bells backwards, you develop the rear part of the deltoid muscles and practically all the muscles on the upper back. But this last is true only when you keep your hands on a level with your shoulders. After a few repetitions, you will note that it means considerable work to always keep the arms horizontal. As soon as the lazy man notices that the upper back muscles are tiring, he allows his hands to drop and when he swings his arms back, he allows them to droop as in Fig. 2. This makes the exercise very much easier, but it spoils it as the developer of the upper-back

muscles,and this is a case where a careless man can utterly waste his time and fail to get the benefits he should, simply because he is not willing to take the little extra exertion necessary to hold the arms horizontal as they are swung back.

There is another exercise which is frequently performed incorrectly, and that is the one known as the "squat" or the deep knee bend. The whole object of this exercise is to develop the muscles of the thighs, and in order to throw the greatest possible work on these muscles, it is necessary to practically sit on the heels as in Fig. 3. (It is very easy to maintain your balance if you swing the arms upward and forward as you squat, and let them fall to the sides as you rise to an upright position.) Any exercise for the thighs calls the lungs into very active play, and the average man will commence to breathe rapidly after he has made a few repetitions of the squat. The careless man soon notices that the squat is a fatiguing exercise, and so instead of going all the way down, he will bend his legs only half-way, arch his back, and lean forward from the hips as in Fig. 4. Because his head is as low as if he were squatting all the way, he sometimes deceives himself into thinking he is doing the exercise correctly. As a matter of fact, this half-way position changes the movement from a good thigh exercise into a combination of a poor back exercise and a poor leg exercise; but because it is easier, the lazy man almost always gets in the habit of doing the exercise the wrong way. The muscles and the lungs can be developed only by use, and it is extremely foolish to try and save the leg muscles and the lungs instead of giving them the very active exercise which is inevitable when you do the squat correctly. Exercising is the one exception to the rule that "The easiest way is the best way"; and the man who tries to "get by easy" when exercising, will never get well developed muscles.

Still another exercise which is frequently misunderstood, is the one known as the "floor dip." The correct movement is shown in Fig. 5. The body, from the neck to the heels, must be held in a rigid straight line, and when you bend the arms, only the upper part of the chest should touch the floor. This exercise is primarily intended to develop the pectoral muscles on the chest and the triceps muscles on the back of the upper-arms; but the act of holding the body rigidly straight will call into play the muscles

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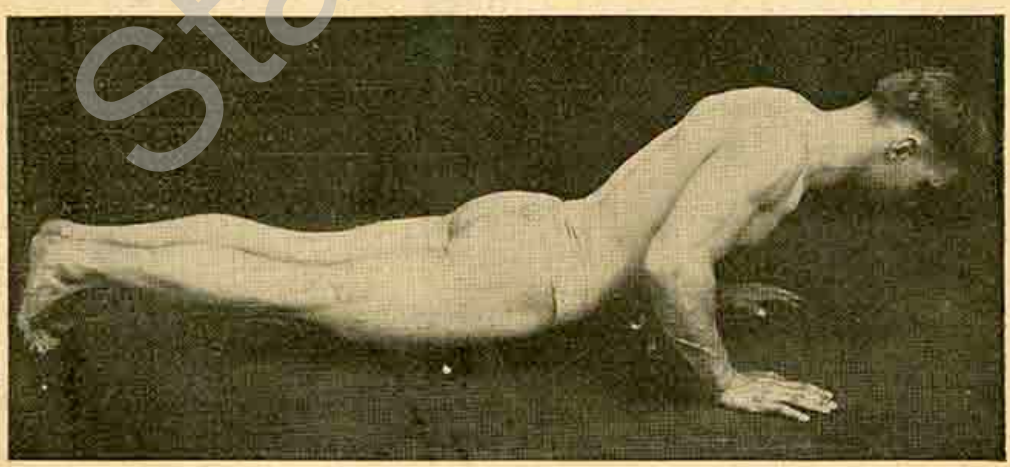


Fig 6

Arthur Saxon — The Incomparable Lifter

By Alan Calvert

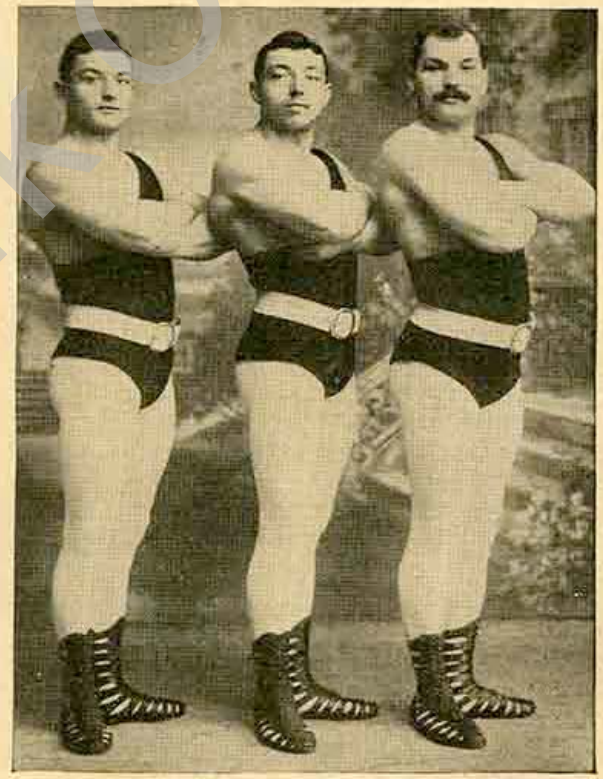
Whenever the Saxons were in New York they made their headquarters at the gymnasium of Professor Henry W. Titus. The author had considerable trouble in getting pictures to illustrate this article, but Professor Titus came to his rescue and loaned the beautiful pictures of the Saxons which decorate these pages.

THE late Arthur Saxon was born in Leipzig, Saxony, in 1878, and died in Duisberg, Rhine Province, in the late summer of 1921. I start off in this way because a number of STRENGTH readers have written to me and stated that Saxon was still living. Saxon was about as big a figure in European athletic circles as Babe Ruth is with us. He was an especial favorite in England, and the English sporting papers all gave announcements of his death and have since referred to him in the past tense. I have been told that one of his brothers — almost equally famous — was killed in the war.

From 1903 to 1909 I subscribed to several foreign magazines in this line, and I constantly saw references to Saxon. Before I had ever seen him I was familiar with his every lift, feat and measurement, and I wrote an article about him long before he ever appeared in this country.

He traveled with a circus to Australia and South Africa in 1899-1900, and he must have made his first appearance in the British Isles about 20 years ago. As a result of Sandow's example and influence, England had gone in strongly for the lifting game, but they had not produced any really great lifters. The reason, to my mind, is simple. Sandow was a specialist when it came to lifting. His pet stunt was a one-arm bent-press, and the English lifters followed his lead. For years the English championship consisted of four lifts—a right-arm bent-press, a left-hand bent-press, a two-hand bar-bell lift, and a two dumbbell lift.

The first English lifter to practice, recommend and teach all the various lifts was the celebrated Thomas Inch, and when Arthur Saxon arrived in England and started to give his startling exhibi-



The Famous Saxon Trio
From left to right—Herman, Kurt, Arthur

tions of strength, Inch was the first to hail him as champion. The enthusiastic Thomas did not stop there, for he devoted a lot of time and energy to bringing the British lifters' attention to the value of all-round lifting as practiced by Saxon.

These two men, Saxon and Inch, effected a revolution in the English lifting methods, and that country, which up to then had produced only a few experts of the "bent-press," now produces champions of all styles of lifting.

Saxon never became as famous as Sandow is. The general public still considers Sandow to be the strongest man in the world, but every lifting expert, be he German, French, English or American, will tell you that Saxon was by far the stronger of the two men. Saxon was a lifter, and a lifter only. He travelled all over the world giving exhibitions. Between 1903 and 1914 he spent the greater part of his time in England, making a few trips to America and occasionally touring all the European cities. In this country he appeared with the Ringling Circus. I do not recall his having appeared on any of our big vaudeville circuits, although he appeared in variety theaters in Canada, where he was well known.

It is an odd thing that the lifters who have been most popular in the British Isles were both Germans. Sandow was a Prussian, while Saxon took his name from his own part of Germany. His real name was Otto Henning. Otto is German for Arthur, and I suppose the name Saxon was added to give him an English sounding name. The English athletes have the highest respect for Saxon, and were never prejudiced against him because he was a foreigner. He returned to Germany at the beginning of the war and, I believe, fought in the German trenches; but after the war was over he could have returned to England, and his personal popularity would have insured him a warm welcome.

Saxon made the English lifters forget all about Sandow's records. In his long career Sandow lifted but few times in competition, and the only chance the public had to see him perform was across the footlights. Saxon continually mingled with the rank and file of the lifting fraternity. He was personally acquainted with thousands of young men in England and America, and he was always willing to help other lifters with his advice and example. Further than that, he was forever making visits to various clubs and gymnasiums, where, instead of adopting the usual patronizing attitude of the stage performer, he would entertain the club members with

Herman Saxon, in a pose which displays the perfection of his figure

impromptu exhibitions of his marvelous lifting power.

In fact, lifting was Saxon's life work, and it was his hobby as well as his business. With him lifting was a serious matter. He took it seriously, and he expected everyone he met to look at it in the same way. When Saxon made his debut in England and in this country professional lifting was in a bad way. Stage performers had gotten into the habit of using fake apparatus, and of greatly exaggerating their lifts. Strong acts had degenerated into a conglomeration of supporting feats. The lifters were not entirely to blame for this, because the theatrical managers insisted on sensational performances, and as every lifter knows, it is far easier to perform a supporting feat with 3,000 pounds than it is to perform a genuine life with 300 pounds. It is true that Saxon introduced one or two supporting feats in his program, but most of his act was made up of genuine lifts with barbells and dumbbells, and these lifts were of such a difficult character that it is doubtful whether any other lifter in the world could duplicate them.

SAXON AND THE BENT-PRESS

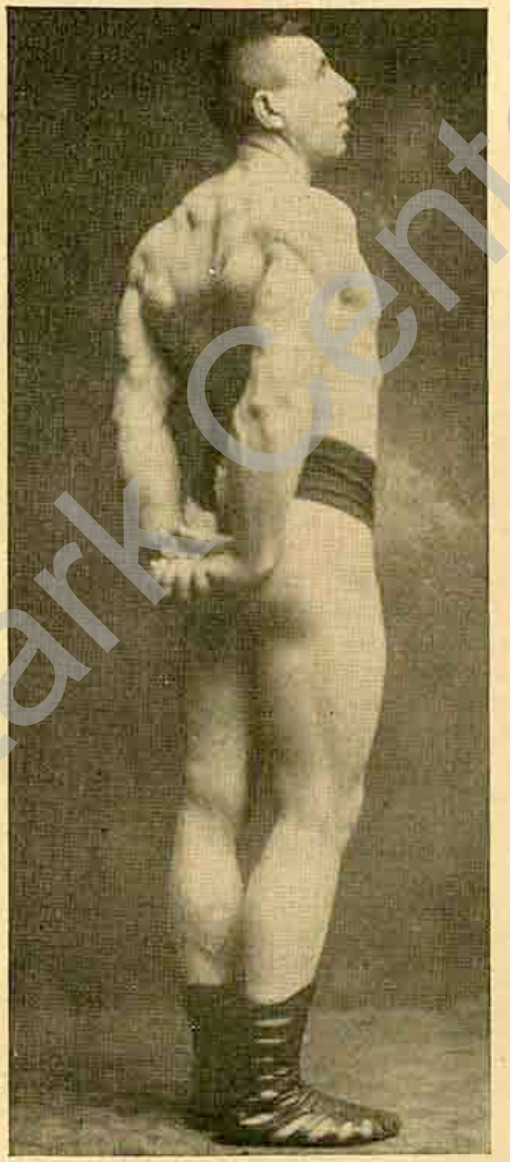
Sandow had made a record by once making a one-arm bent-press with about 270 pounds. Louis Cyr had capped this by pressing a couple of pounds more. Two or three other lifters had raised about as much. It had come to be a habit of all stage lifters to claim that they could bent-press 300 pounds with one arm, so when Saxon first came to England and announced that he would elevate 300 pounds or more in every performance it was supposed that he was just following out the usual professional custom. Therefore, Saxon's act at first attracted but little attention. He made all his lifts in such an easy manner that the experts in the audience were convinced that he was using fake weights. The visitor was so anxious to convince his audience of the genuineness of his lifts that he adopted an unusual method. Many professionals when visiting a new town would have a very heavily loaded dumbbell placed in the vestibule of the theater. Any passerby could test the weight of the bell, and, as it was usually loaded to four or five hundred pounds, few of them could even lift the bell from the floor. As soon as the performance commenced the bell would be lugged behind the scenes, and then the announcement was made that the strong man would lift

Arthur Saxon at the age of thirty-four

the bell that had been in the vestibule; and so he would, but before he lifted it he had it unloaded. Saxon exactly reversed this procedure. He used a big bar-bell which weighed 150 pounds when empty. He would take all the weights out of the bell and leave it in the vestibule, as per custom. The English towns are full of amateur lifters, and always two or three young fellows will come along, test the weight; then, if they could "bent-press" it without difficulty, when the performance started they would be seated in the audience eager to win the money prize that Saxon gave to anyone who could elevate his bell. Always they tried, and always they failed; because Saxon invariably loaded up the bell until it weighed more than 300 pounds before he had it brought on the stage.

After several dozen amateurs had been discomfited in this manner letters commenced to pour in to the English sporting papers. Saxon was given a chance to demonstrate his lifts before a jury of experts, and more than verified his claims.

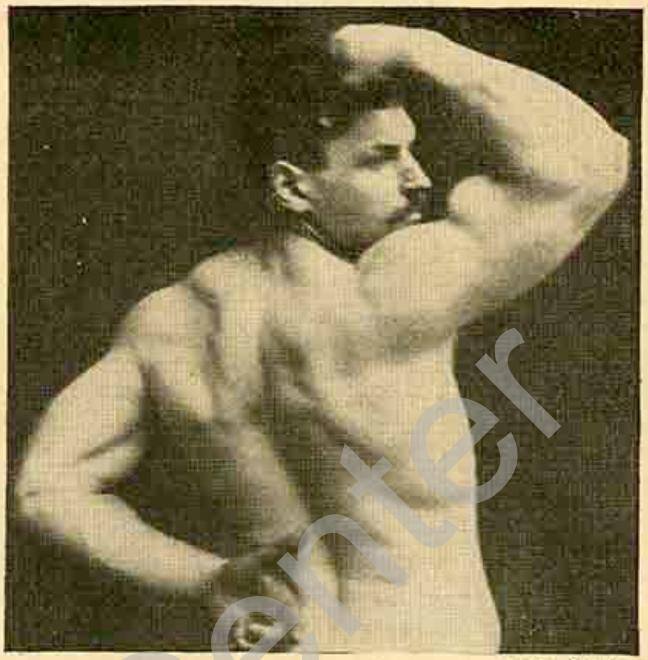
Since Saxon has showed the way three other men have succeeded in making the bent-press with 300 pounds. Edward Aston and Thomas Inch both elevated a trifle over that weight in public. My friend, Joe Nordquest, bent-pressed 300 pounds once a day for a week at the Greek-American Athletic Club in New York City, and then, when he came to make his public trial, his side was so sore that he could not raise over 285 pounds. Saxon could bent-press 300 pounds twice a day, six days a week, for six months on end. Usually he had the bell weighted from 300 to 314 pounds. His best official record is 336 pounds, made in England. He frequently lifted more than that at informal exhibitions, and on December 12, 1905, he was credited with a one-arm bent-press of 370 *pounds* in Stuttgart, Germany.



Kurt Saxon,—Both the younger Saxons had cleaner-cut muscles than the famous Arthur had

Even after Saxon had made his official English records there were still many athletes who doubted the authenticity of his lifts, so for a year or two Saxon made it a point to hunt up these doubters and give them private demonstrations. At Birmingham, Liverpool and other towns he visited gymnasiums and made records of anywhere from

315 to 331 pounds. It was never necessary for him to train in order to make these lifts. He was always in training, and he never was in the least fussy about the bar-bells he used. In Liverpool he visited the Sandow school and made a bent-press of 331 pounds by using a bar bell weighing 160 pounds with a 90-pound dumbbell tied on one end of the bar and an 81-pound dumbbell the other. Few things gave Saxon more pleasure than the fact that he was able to demonstrate his lifting ability before the famous Donald Dinnie. Dinnie, a gigantic Scotchman, was for many years the world's champion lifter, but he held the stage in a day when scientific lifting was unknown. He was an old man when Saxon came to England, and, while he admitted that Sandow might have put up 270 pounds with one hand, he stoutly asserted that neither Saxon nor any other man in the world could put up as much as 300 pounds. Dinnie's claim was that no man weighing only 200 pounds was big enough or heavy enough to elevate 300 pounds with one arm. Saxon's travels brought him into Dinnie's neighborhood, and in company with his two younger brothers he paid a call on the old gentleman. He told Dinnie he was there to make good his claim, and the Scotchman rolled out a bar bell weighing 230 pounds and intimated that Saxon would have trouble in pressing even that weight. Arthur told one of his brothers to tie a 56-pound weight to the center of the bar-bell handle, and, swinging the two weights to his shoulders, he pressed it aloft with the right arm in the easiest possible style. Later he took the same bar bell with a 56 pound weight tied *at each end,* and pressed the 342 pounds aloft with his right arm. Dinnie was immediately transformed from a severe critic into one of Saxon's greatest admirers, and he wrote immediately to all the sporting magazines, withdrew his former statements, and proclaimed Saxon to be the greatest lifter in the world.



Apeda Studios

Unlike most "strong-men," Arthur Saxon disliked muscle-posing

ALL-ROUND LIFTING

While Saxon specialized on the bent-press, he practiced all the other lifts and included many of them in his daily exhibitions. In fact Saxon tried every known lift, and while he does not hold many of the records, his lifts compare favorably with those of any other lifter of equal weight. In the one-arm snatch he did 195 pounds officially and 200 pounds in practice. In the one-arm military press he did 125 pounds; in the two-arm military press 252 pounds; in the two-arm jerk his best record is about 365 pounds. Three or four athletes have beaten this record, but they all weighed far more than Saxon did. Lying flat on his back he pulled across his face to chest, and then pressed aloft a bar-bell weighing 386 pounds, using both arms.

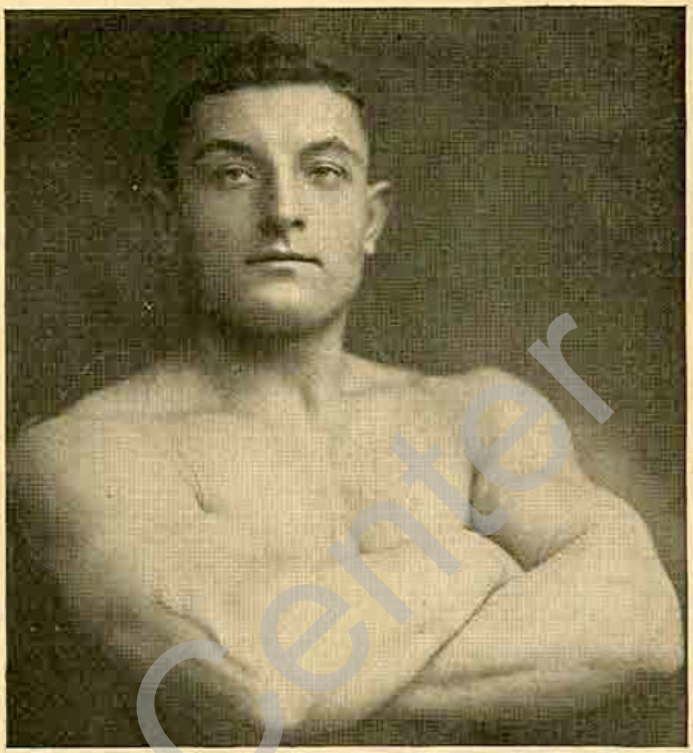
In all the other lifts his performances are very, very close to the existing records. The best authorities believe that if he had specialized on one lift at a time, he could have made records in each and every lift that would have been as remarkable as his record in the bent-press, where he exceeded his competitors by ten per cent. The peculiar thing is that while he was devoted to lifting and practiced it incessantly, he was not "record-hungry." He was very proud of his record in the bent-press, but in the other lifts he did not seem to care about records, so long as he made his lift in good style. However, he has some feats to his credit which no one else has ever been able to duplicate. For example, he would take a bar bell weighing 315 pounds, press it aloft with one arm, and then throw it from hand to hand at arm's length above the head. Again he introduced a lift known as the "two-hands-anyhow," in which he would take a heavy bar bell, press it aloft with his right arm and then while holding the bell aloft he would lean over, pick up a kettle bell with his left hand, and then press up the kettle bell until it was alongside the bar bell. At the Achilles Athletic Club in Dresden, Germany, he raised 448 pounds in this way, using a 336-pound bar bell in the right hand and a 112-pound kettle bell in the left hand. He had one trick which was never duplicated. He would put a 56-pound weight on the floor, tie a four-foot cord to the weight, and then stretching out his right arm horizontally, he would grasp the upper end of the cord and lift the weight from the ground. This does not sound like a very difficult stunt, but many athletes who could muscle 75 pounds failed to budge the 56-pound weight in Saxon's style.

Kurt Saxon, posed to show his remarkable arm and leg muscles

SAXON'S PHYSIQUE AND TRAINING METHODS

Neither of his parents were of remarkable physique, but strength must have run in the family, because Arthur and his two younger brothers were all marvellously strong men. He started weight-lifting at the age of sixteen, and he said that he began with 56-pound weights. My friend Charles Herold, who belonged to the same club, told me that Saxon put up a 75-pound weight the day he joined the club. He continued his practice with

the weights for a couple of years and made extremely rapid progress both in size and strength. When he was seventeen years old he weighed 189 pounds. When he was eighteen he took up wrestling, and as an amateur he was never beaten, either at wrestling or lifting. He won many medals for lifting, and soon drifted into professional ranks. Some of the pictures in this article will give you an idea of his physique. He was not a tremendously big man. He stood five feet ten inches in height, weighed 200 stripped, his normal chest was 46 inches, his biceps 17⅛ inches, fore-arm 14¾ inches, thigh 24 inches, and calf 16¼ inches. He was not what one would call a prettily built man. While his muscles were large, he gave the impression of being sinewy rather than muscular. I regret that I cannot tell you the size of his wrists, which were extraordinarily large; they must have measured more than 8 inches around. His bones were of great size and extreme solidity. Had he gone in for muscle culture he could have undoubtedly increased his muscles in size, but he held the unusual theory that the strength of a muscle lay in the strength of the tendons at the ends of the muscle, and he was continually practicing exercises to increase the strength of the tendons rather than the size of the muscles.



Herman in the conventional "block" pose

His training was simplicity itself. He gave two exhibitions daily, and on top of that he practiced an hour or two every day with the weights. He never dieted. He was very fond of meat and preferred beef. An acquaintance of mine, a vaudeville performer, travelled Canada in company with the Saxons. He told me that when they stayed a week in one town, Saxon always gave the head waiter at the hotel a large tip and directions to furnish him and his brothers with beefsteaks two inches thick, at least twice a day. Like most Germans, he was very fond of beer, and he consumed large quantities daily. Three dozen bottles a day was a fair average for Arthur. It never seemed to affect him in the slightest. He had been brought up on beer, and he drank it as the ordinary man would drink milk or water.

Saxon had immense vital and constitutional strength as well as muscular strength, and his endurance was phenomenal. He was the kind of man who kept his strength under any conditions. It was related that on one occasion he gave a Saturday night performance, boarded a train in company with some friends, sat up all that night, fished all day Sunday, and sat up all Sunday night on the

return journey, and then gave his Monday afternoon performance as usual. The loss of 48 hours sleep made not the least difference in his power. He had so much strength that it never occurred to him to save it. When travelling with the Ringling Circus he would sometimes amuse the canvas-men and roustabouts by performing incredible feats of strength, and then walk in the tent and do his act with as much ease as though he had been resting for hours previous. Nothing pleased him more than impromptu contests with brawny workmen and porters. One Monday in London he had to send his apparatus to a new theater, and he deliberately loaded one trunk with about 450 pounds of dumbbells and then stood by and smiled at the efforts of two cabmen who were trying to place the trunk on the top of the cab. After they had struggled ineffectually for several minutes, he walked over, and unaided, lifted the trunk and placed it on top of the cab so gently that he did not even scratch the paint.

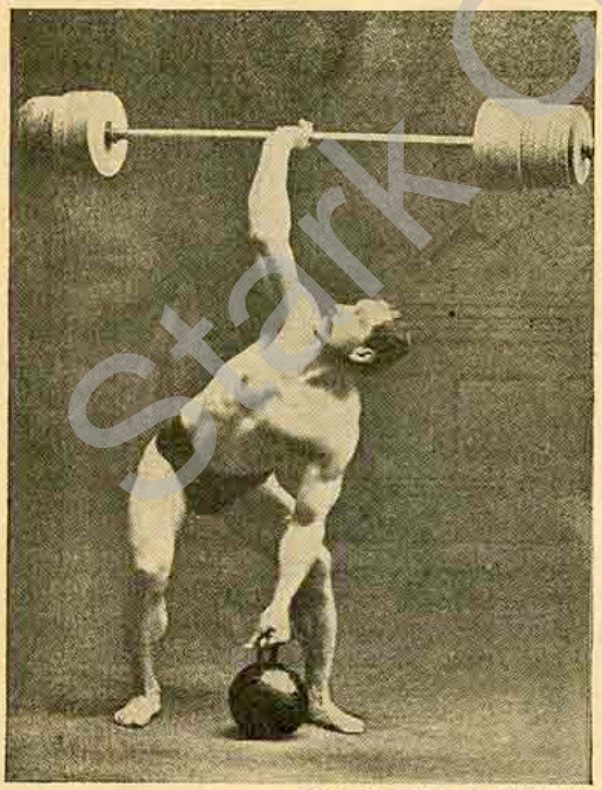


Photo loaned by O. R. Coulter

Arthur Saxon making his famous "two-hands-anyhow" lift with 448 pounds

HIS THEORIES OF STRENGTH

Like many of his contemporaries, Saxon held the opinion that development of the calf of the leg was unnecessary in lifting. He, therefore, wasted no time in trying to develop big calves, although he did pay a good deal of attention to strengthening his ankles. He considered that a lifter should have tremendous strength in the muscles of the thigh which lie right above the knee, and he claimed that given great strength in that region, a man with 24-inch thighs could have just as strong legs as another man who had thighs measuring 27 inches at the crotch but who lacked the development right above the knee. He contended that a strong wrist was more important than a big forearm, and he was forever practicing stunts which tested the strength of the wrist. Goodness knows his forearms were big enough.

He considered that a lifter should devote more time to strengthening the deltoid muscles on the points of the shoulders, than trying to increase the size of the upper-arm. He claimed that the deltoids were the muscles that played the greatest part in overhead lifting. As a proof of the correctness of his theory he called attention to the fact that there were many men in England who had 16½-inch biceps but who could not send 250 pounds aloft in the "two-arm jerk," while his two young brothers, whose arms measured 15¼ inches *but who had tremendous deltoids,* could each raise 290 pounds in that lift.

Arthur Saxon's success as a professional lifter was due to his reputation for two things—his

(*Continued on page 77*)

Strength Phases

By T. N. Buckingham

MY introduction to what one might term "cultivated strength" came in early January of 1900. I was approaching twenty years of age at that date so you'll easily figure out how old I am. At that time I was well along in my sophomore year at college, a big, rather undeveloped youngster—fond of football and baseball, fairly good at the shot and hammer and keen for boxing. As a matter of collegiate record maybe I was too fond of athletics—but I "got by!"

I recall that having returned to college from the Christmas holidays, I dropped into the study of a pal one evening—we were going in town to a show. I knew that he had been attending some sort of "physical culture joint," but as our athletic paths led at different angles, I hadn't seen him "stripped" in a long time. He was changing his shirt when I dropped by and I literally stared in amazement at the transformation of his physique—it was positively startling. From a comparative stripling of around a hundred and forty pounds he had bloomed into a big chested, rugged specimen with bulging biceps and a slender muscle coated waist and belly. In response to my eager queries he told me all about the "system" he'd been taking. So next afternoon I went with him to the private "gym," met his "Professor" and signed up for a regular three months course. And many's the time since that I've looked back on that dotted line and the fifty dollars as absolutely the best investment I ever made or ever will make.

The "gym" was just a large basement apartment in one of the private dormitories on a side street at Harvard, and rather lacking, I thought, in the usual apparatus. There was a set of rings, and a trapeze, together with several floor mats and quite an assortment of dumb-bells and bar bells. The Professor, a marvellously developed chap, Dewell by name, first measured me carefully and recorded my weight. I was five feet ten inches tall, weighed a hundred and eighty-five stripped, and had a forty-

The guide who carried the heavy stag for miles up the mountain-side.

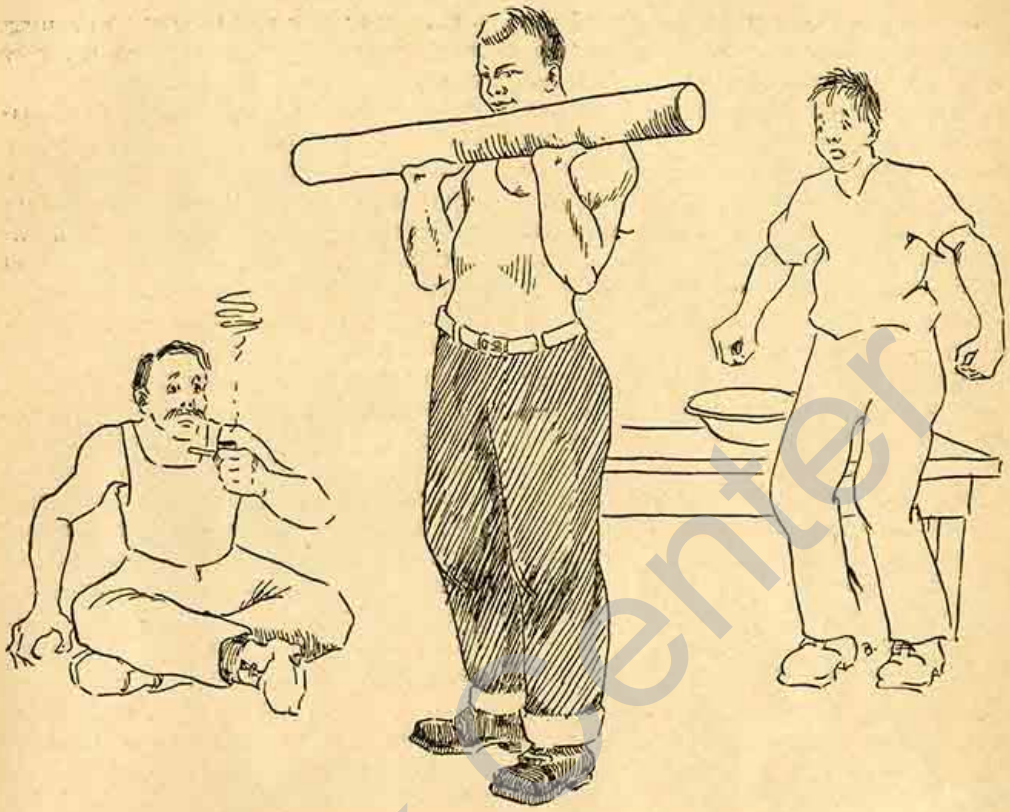
two inch normal chest and a thirty-four inch waist—I wasn't developed—just smooth and in reasonably good shape. The Professor thereupon handed me a pair of five pound dumb-bells, hustled me into a gym suit and told me to follow him through some "exercises." By the time I was half way through said exercises I was "all in." After a bit of a rest I was introduced to a fifty pound bar bell and given a primer lesson in two handed lifting—then made to do some mat exercises and told to take my bath. For the next three or four days I was as sore as the proverbial boil, but in a week I was all over it and fascinated by the new work, was hard at it.

Dewell was a careful and thorough instructor, the work progressed methodically and the various lifts detailed in the most painstaking manner. Everything was based upon progressive individual need and merit. At the end of a month I could see that something was "going on" so far as I was personally concerned, and at the end of three months there was no room for doubt. I couldn't wear my regular collars and shirts and my clothes took on a tightness that threatened inroads on my roll that might make the course a liability. But I didn't care. A careful measurement at the end of three months revealed that I weighed a hundred and eighty-nine pounds. My neck was a shade over sixteen inches, my biceps the same, and my chest a clean forty-five inches normal, and nearly forty-eight and a half expanded. My thighs were in keeping, but my calf has never gone above fifteen and a half inches.

The Professor had quite a class and rivalry in the various classes and weights ran high—we trained to "break" one another's records. The work never grew monotonous—we varied it, of course, with "stunts" and boxing and wrestling and "fast" work. It was a routine to encourage development and speed, none of us aspired, nor did Dewell encourage us to become "strong men" in the show sense.

During summer vacation I came south and played baseball—contracting malaria. I was never free from it the next fall and lost both time and weight, but I kept up my work until spring and then left college. It took a full year to eradicate the disease from my system, and I then entered a southern university and studied law. I brought with me from college a hundred pound dumb-bell or rather a bar bell, and used it in the gym during the winter months. The malaria left me weighing around a hundred and eighty pounds, but with my measurements, once my health was regained, about the same—a shade larger. In the south I played football and baseball two years and did some track work. I could run the hundred in eleven seconds, pole vault a bit and broad jump and put the shot—as a matter of record I think I won the "all around"—what I mean is the weight work hadn't left me "slowed up" a bit.

I pitched on the baseball team and changed off to first base—not much evidence of being "muscle bound." I had never gone in for weight lifting records, and make no claim or pretense of ever having been a real "strong man." I put up a 170 pound bar bell forty-seven times without stopping—that is two handed from floor to chest—thence chest up and back to chest. I could lie on my back and stiff arm better than a hundred and twenty-five pounds from arm's length to overhead. I could lift from floor overhead—using the shoulder bridge, pretty well. I recall a present-day congressman who was an All-American center and who used our club gym to try and keep down his waist line. I could lift him overhead three or four times easily enough and the scales at the club would weigh up to two hundred and fifty, and that was not enough to take care of him. I



The Herculean Swede whose strength amazed the author.

never cared for the "bent press"—never liked the lift, I could better two hundred pounds—that was about all.

Getting back to my original training, I remember that a certain "strong man" was doing his "act" at a Boston theatre. He had taken some "stage" lessons from Dewell, and Dewell had him come out to Cambridge one morning and make a few "lifts" for us. He did them beautifully, too. From Dewell's place we went over to the university gymnasium and the director, a national authority, measured our strong man and put him through the then intercollegiate strength test. If my memory serves me rightly, and it isn't far wrong, he accumulated a total of around twelve hundred and seventy-five "kilos." He made a splendid back-and-leg lift—a good back lift, had a fine grip and good lung strength. But when it came to "dipping and chinning"—he made a sorry fall down. He weighed, for instance, about a hundred and eighty-eight pounds, and the total strength of a fellow's chest and upper arms was at that time arrived at by adding his "dips and chins" and multiplying them by one-tenth of his weight in "kilos." Our strong man dipped seventeen times and could chin himself only twelve—thus multiplying twenty-nine by 8.8. The winner of the intercollegiates that year amassed a total of around nineteen hundred points and was heavier than the strong man. The latter, by the way, was completely winded after the dipping and chinning ordeal.

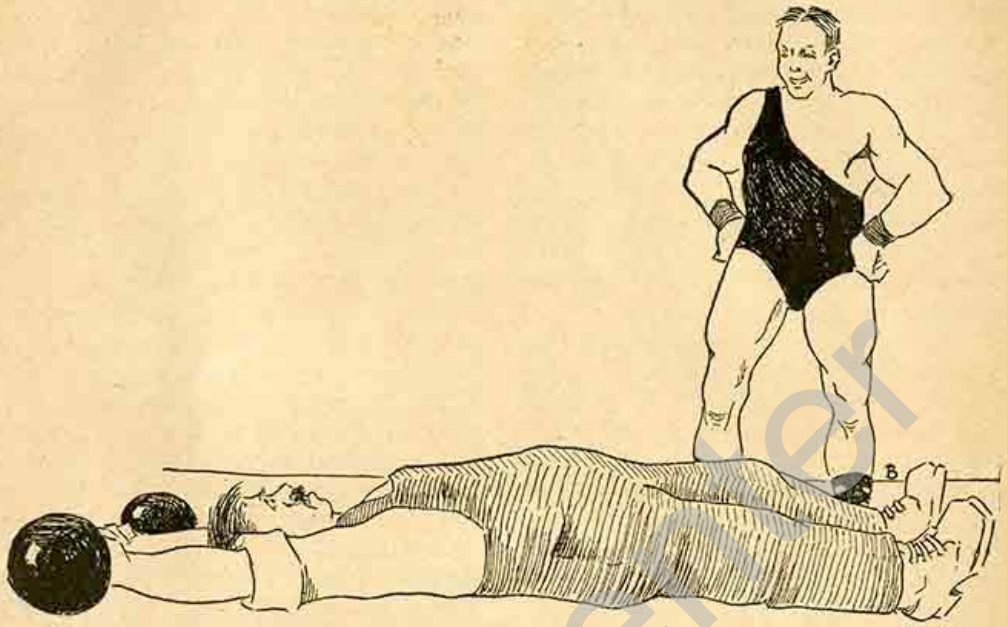
I may be mistaken, but in some way I have a recollection that the name Jennings was associated with that of

Al Treloar, who about that time won the first thousand dollar prize for the most perfect development. As I recall it, Dewell had Jennings as oarsman under his charge for a while in that same private gym—it comes back to me as I associate the "strong man's" advertisement and that morning in the gym many years ago. Along these lines, I went back to that same gym two years ago—I had been hunting in Canada and came through Boston—stopping to see a football game. Coming back through Harvard Square that afternoon I said to my friends: "Wait a bit, I want to see if I can locate a place I used to work in twenty years ago." I went through the familiar hall and down into the basement apartment—and there was the same old place, same old bells, same old everything. There were even some of the pictures on the walls, made of our crowd years agone. Dewell wasn't there, but a young fellow was "working out!" I looked about and saw a bell—a bar bell—an ancient enemy—and I just wanted to see if I could come back at him after a lapse of some twenty sessions and with a sprinkling of gray along the hair side lines. So I took off my coat, and to the obvious astonishment of the young pupil "me and that big bar bell had it out"—but I got it up all right.

Well, after I left college, business held me for a while, but the call of the open was stronger. I was a reporter awhile and then drifted west, did some "tramp" football playing and for a season or so, some boxing, if you choose to call it that. We ran a ranch for a long time, but after ten years of knocking about, there came a time when it was time "to saw off." But all along and through it all, I've kept up exercising, and I still have my two old bar bells—and a plate bell I added not long ago. In my years of "knocking around" I've kept in touch with the game and, due to the training of my reportorial days, I have never lost a chance to size up athletes and strong men. Naturally, I have seen a lot of what you might call "backwoodsmen"—that is guides, ranch hands and timbermen—and I've run across some amazing specimens, too. Offhand I'd say that the strongest men predominate in the upper colder climates—their interests, too, in competitive tests and feats of strength are seemingly keener. On the other hand, in casual business walks I have run across young fellows of amazing natural strength.

There was a baggage delivery man around college, a huge, chunky, barrel chested mammoth, weighing around two hundred and fifty, who thought nothing of getting a big trunk on to his back and packing it up several flights of stairs. He could pull the penny-in-the-slot lifting machines out of gear. So we took him to the gym one afternoon prepared to startle Dewell with him. Just to make a good start the latter had the trunk heaver lie on the mat and gave him a hundred pound bell to pull over his head stiff armed. He tugged and puffed and turned purple, but he never got that bell up. On the other hand, I doubt if Dewell or any of us—his pupils—could get away with the trunk stuff. It's all in the training and nerve centers pretty much. I've seen boxers in good shape carried too fast by a wrestler going at top speed, and I've seen a wrestler in the primest condition try to step three or four rounds fast fighting and be a "blown up sucker" half way through.

Absolutely the most amazing feat of natural strength I ever saw occurred on a ranch some years ago. The boys hauled up to our blacksmith shop from the saw mill an old steel bar, blown from some machinery unit. We had no accurate weight test on it, but as nearly as I could estimate by the trouble it gave me in rocking it over my shoulder and getting it up—it wasn't far from a hundred and eighty-five pounds. It was so thick through



The stunt which had the giant truckman completely "stopped."

that only once in a while—my fingers being short—could I pick it up off the ground. One day three Swede boys came up the valley, camping, fishing, holidaying, and helping hay for their keep at the different ranches. One noon, having "washed up" for dinner, a bunch of the hay hands and punchers began monkeying with the big bar. The three Swede boys, as blonde as white molasses candy and as silent as tombs, looked on but made no effort to join in the fun. The eldest boy was a whale of a chap—you had to get alongside him to feel how big he was—he was well over six feet and built along heroic lines. Finally some chap challenged him to see what he could do with the weight. He got up lazily and grinning sheepishly, walked over to the bar, stooped down, got a good grip on it with his hamlike hands, and with absolutely no more effort than picking up a bale of cotton goods, he raised the bar —somewhat awkwardly it is true—to his chest and then pushed it aloft. He held it there a few seconds, grinned broadly, and then pitched it aside. It was by far the best offhand exhibition I ever saw, and I at once tried to interest the boy further. But he wasn't interested in anything except haying and payday, and fish and grub. With the proper training I believe that Swede could have lifted the doors off the U. S. Treasury and never turned a hair. I got him to let me take a few offhand measurements—I remember his chest as a natural forty-five and his biceps a shade under seventeen—he lacked, too, the triceps that bulge below with weight training. The last time I saw him he was tossing hay up onto a wagon, grinning placidly while the sweat ran down into his eyes and over those huge fore-arms. He was the finest natural specimen I've ever seen, and a simon pure case of the "eighteen collar and six hat."

One of the finest specimens of natural training I've ever encountered is Arthur Pringle, of Stanley, New Brunswick, with whom I had the good fortune to hunt moose a few seasons

back. Pringle was well past sixty when I was with him. He stands better than six feet and is beautifully proportioned and developed by a lifetime in the open, and heavy work with axe, sled and lumber. I remember thinking one day, when I saw him roll up his trousers and wade a river, that his legs would have graced an art gallery's best. But one feat—and he doubtless thought nothing of it and as all in a day's work—I saw him perform after I'd gotten down a big bull moose. Carrying each a big pack of blankets and grub we had climbed a rather bare, steep mountain—straight up so to speak—and it was a real heartbreaker—for I know the breed. Just under the crest, we sat down to rest, leaning back against our packs and grade—and scoured the country far below with the glasses. Far, far below us, Pringle at length picked up a moose emerging from the timber onto a flat by the river we'd left. We eased out of our packs and pelted off down that mountain, fatigue forgotten. Eventually two miles away, we stalked and killed the moose. It was mid-day when we finished dressing out the head and hide and hanging up the meat. We were fifteen miles from camp—but determined to take in all we could at one trip. We made the scalp and horns into one load and the hide and some choice cuts into another. Then it was "up to" us to go after the packs we'd left on the mountain top, and with our present loads I felt we were "up against it." Going up that grade was the hardest one "lift" I ever made, and while we sat "blowing" preparatory to a final readjustment of all packs, I couldn't but admire my old companion and hope that when more than three score years had settled on me I could duplicate that performance. I thought that several times more that afternoon as we staggered along homeward and made camp that evening just as the moon came up. Mr. Pringle told me several interesting stories of men's hardihood and strength, showing me at times steep pitches and benches of the mountains as being hard to negotiate with a toboggan load with two hundred pounds of grub.

One incident came under my observation about which the "victim" was said to be sensitive. A wonderfully skillful and hardy young guide of Mr. Pringle's was due to report at Fredricton to stand his physical examination for duty overseas during the war. He was in the woods and waited until two days before he was due to report—leaving camp early one morning with better than a fifty mile walk through the snow twixt him and the head of the settlement. He carried his belongings in a pack that wasn't light either; he figured he'd be gone a long, long time. He made the settlements about dusk, rested and dined, and that night through the cold and snow, made it another twenty miles to the railroad. He put his affairs in shape and reported in the city. After the examination the Board turned him down, fearing that his slight build could not stand the strain. He "hollered" and did all he could, but they turned a deaf ear, and much humiliated he turned back to the woods and is there yet. Mr. Pringle also told me of a guide of his named Gilmore—a tremendously powerful man, who thought nothing of slinging a big buck across his back and stalking off to camp. If I remember correctly, he added that this same chap eventually ruptured himself trying some stunt of this kind. Along these lines, while this article is in preparation, my brother, who is something of a "broth of a boy" himself, volunteered the information that he considers Eddie Hart, a former teammate of his and captain of a Princeton eleven, the "strongest" man in the world. He added that Hart, a few years ago, to decide a bet, hefted a bull caribou onto

(*Continued on page* 86)

Insulin: A Cure for Diabetes

If you read the daily papers, you have probably gotten the impression that this Insulin is a miracle working drug.

The co-authors of this article are scientists connected with the Bio-Chemical Laboratory of Columbia University, and they explain the source of this new serum, its proper administration, and its limitations as well as its marvelous curative effect. While Insulin may not be a miracle-worker, it is undoubtedly one of the greatest medical discoveries of the age.

By Casimir Funk and Benjamin Harrow

ONE of the writers of this article was present at a meeting of the American Physiological Society held in New Haven in December, 1921. Several scientific papers were presented and discussed. The author of one of these was a Dr. Banting, a young Canadian physician, who told his audience how a certain extract obtained from the panacreas (sweetbread) when injected into animals suffering from diabetes markedly improved their condition. The substance in the extract giving rise to the "cure" was named "insulin." Whether it was the excessive modesty of the speaker, or whether due to a somewhat apathetic attitude on the part of the audience, Dr. Banting's address made very little impression on the members present. A little more than a year has passed. Today the entire world of science is discussing Dr. Banting and his work. Even Sir Charles Sherrington, the great brain physiologist and the present president of the English Royal Society, considered the work of such fundamental importance that his annual presidential address was devoted to it. In the opinion of those competent to judge, Banting's contribution to physiology and medicine has already taken its place among the great scientific achievements of the present century.

To appreciate the significance of the Canadian's discovery we must discuss, in some detail, the nature and origin of diabetes.

Diabetes is called by the Germans "Zuckerkrankheit" or "sugar disease," which is a very appropriate name, for in the urine and in the blood of a person suffering from it we find abnormal amounts of sugar. In the language of the scientist the disease is associated with a disturbance in the utilization of carbohydrates (of which sugar is an example). The severity of the disease varies a good deal with different individuals. Very often, under the careful guidance of a physician, patients remain tolerably well for a number of years, and sometimes die of "natural death." However, every year in this country alone, more than 15,000 persons die from the disease, and there are always to be found several times 15,000 who are afflicted with it to a more or less severe degree. It shares doubtful honors with tuberculosis and cancer in being one of the outstanding diseases to which a high mortality may be attributed. Cancer and tuberculosis remain baffling problems despite innumerable "treatments"; but we have reason to believe that Banting's work has paved the way for a specific cure for diabetes.

Since diabetes is associated with a disturbance in the utilization of carbohydrates, it becomes necessary to trace the passage of carbohydrates in the body. Under normal conditions these substances are considerably simplified in the digestive tract, the products absorbed through the walls of the small intestine, and deposited in the liver in a form known as "glycogen" or "animal starch." The energy needed by the body

is supplied by the glycogen stored in the liver. The various carbohydrates taken in through the mouth (such as sugar and much candy, bread and potatoes) are largely converted in the digestive tract into a relatively simple sugar known as glucose (which, by the way, is used so extensively in the manufacture of cheap candy). This glucose is absorbed through the walls of the small intestine, passes into the blood vessels and finds its way into the liver, where it is converted into glycogen, and where it is stored as such. The energy needed by the body is supplied when the glycogen is first reconverted into glucose and then decomposed into—ultimately, though not immediately—glucose.

The liver is the seat of carbohydrate activity, and, as we shall see, the critical stage in its process. For the purpose of emphasis we may represent the changes in and around the liver as follows: *carbohydrates* digestive tubes, *glucose* liver, *glycogen* liver, *glucose* cells, *carbon dioxide*, and water.

In diabetes we find abnormal amounts of glucose in the blood and in the urine. Obviously the mechanism by which the glucose is further broken down into carbon dioxide and water has been largely destroyed. What is this mechanism? What controls the quantities of sugar in the blood and in the urine? Answers to these questions are connected with the cause of diabetes.

An answer was supplied in the early eighties of the last century by two German physicians, Minkowski and von Mehring. They found that whenever the pancreas, "sweetbread" of a normal animal, is removed, the animal becomes diabetic; that is, aside from showing all the symptoms associated with the disease, the blood and urine are flooded with large quantities of sugar. It seemed plausible to assume that removing a normal pancreas is in many ways the equivalent of a degenerated pancreas left in the body—a pancreas that has ceased functioning properly; so that Minkowski's and von Mehring's research led to the view that diabetes is to be traced to a "diseased" pancreas. This view has since been abundantly confirmed. Though there is reason for believing that some cases of diabetes may be due to a derangement of an organ, or organs, other than the pancreas, such instances are probably rare; and we are safe in stating that the commonest form of the disease is "pancreatic" diabetes.

We cannot leave Minkowski's and von Mehring's work without mentioning another experiment of theirs which has had far-reaching consequences. They found that a dog suffering from diabetes on account of the removal of its pancreas, could be partially cured by having either the entire organ or even part of it engrafted under the skin. The success of the graft—or any graft, for that matter—depended upon how quickly and how completely the blood vessels of the foreign tissue joined hands with the blood vessels of the body; how quickly and how completely the blood pumped from the heart entered the foreign organ. This experiment suggested that the pancreas produces a substance which is discharged into the blood and which, perhaps, finds its way to the liver, there regulating carbohydrate utilization. The experiment also suggested one method of combatting the disease. Unfortunately for mankind, grafted organs tend to degenerate sooner or later, so that the relief is at best but temporary. Minkowski's and von Mehring's discovery was, therefore, of theoretical rather than of practical importance.

When an organ such as the pancreas manufactures a substance which immediately finds its way into the blood stream and then journeys to another organ, such as the liver, to influence the activity of the latter, we then speak of the pancreas as a "ductless" or "tubeless" gland, and of the substance it manufactures as the "hormone" or "chemical messenger." The thyroid in the neck, the adrenals above the kidney, and the pituitary in the

head, are other examples of "ductless" glands.

For an understanding of what is to follow, we must point out that the pancreas is a "mixed" gland—a duct and a duct*less* gland. Through its duct or tube a secretion, which contains the most important enzymes or ferments connected with general digestion, is poured into the intestine. This is one phase of the organ's activity. But, in addition, we have seen how the pancreas manufactures a substance which does *not* pass through a duct, but which is probably taken up directly by the blood stream and sent to the liver to regulate the latter's activity. Therefore, the pancreas must also be regarded as a duct*less* gland.

Ever since the eighties, ever since Minkowski's and von Mehring's work, physiologists and clinicians have asked themselves the questions, what substance in the pancreas regulates the sugar tolerance? Under what conditions does this substance disappear? Is it possible to extract the active substance from the organ? Attempts to answer these questions gave rise to voluminous work in many lands, but the results were not very encouraging; and, therefore, all hope that a speedy cure for diabetes would be discovered was dashed to the ground. Clinicians turned more and more toward the dietary factor in diabetes—to the treatment of diabetes by a careful regulation of the diet. Such men as van Noorden on the continent, and Allen in this country have done much in this direction.

We now come to Dr. Banting. The year is 1921. He is assistant in the physiology department at Western University, Ont., Canada. He has thought much and deeply on the general subject of diabetes. He has read all that the past masters have done, but with a critical eye. He sees flaws in their work and can think of several improvements in their technique. He has read Steinach's article on rejuvenation and gets a brilliant idea. Steinach tells us that we must regard the organs of reproduction as a "mixed" gland, having an *external* secretion which pours out through ducts and which contains the reproductive elements, and an *internal* secretion containing a hormone that finds its way directly into the blood and "rejuvenates" the various organs. He claims that tying off, or cutting off one or both ducts multiplies the activity of the cells that manufacture the internal secretion, and thereby "rejuvenates" the patient. Why not do something similar to the pancreas? asks Banting. Why is it not possible that tying off the pancreatic duct will lead to a multiplication of the cells responsible for the production of its internal secretion—of the hormone that regulates sugar utilization?

Banting travels to Toronto to discuss the problem with Dr. Macleod, professor of physiology at the university there. Macleod, himself a leading authority on diabetes, is visibly impressed. He places his laboratory and his equipment at the disposal of the visitor. He promises active support. He gets together a group of workers at the university to facilitate the research.

Here is a brief summary of several of their earlier experiments:

They took a young dog and carefully tied off the pancreatic duct. They allowed the dog to live ten weeks, during which time the particular cells responsible for the development of the internal secretion (the "islands of Langerhans") were given an opportunity to multiply. The pancreas was next cut out and an acid extract made from it. In the meantime another dog had been made diabetic by removing its pancreas. When the extract was injected into the diabetic dog, the animal's condition improved, his tolerance for carbohydrates increased, and the percentage of sugar in the blood and in the urine decreased.

Further experiments made it clear that in order to remove the active substance from the pancreas it was not even necessary to perform the preliminary oper-

ation of ligating the pancreatic duct; to destroy the ferments which inhibit the action of the active principle, the insulin, quick excision of the organ from a young animal and quick extraction with dilute acid or alcohol, is all that is necessary.

These early experiments were sufficiently encouraging to warrant further and more elaborate work. A large part of the clinical and scientific staff of the University of Toronto was recruited for the research. The immediate objects were, first, to prepare a stable preparation of the active substance, to which the name "insulin" had been given and to isolate, or at least to concentrate the active fraction. The former was accomplished in the following way: it was found that not only is the percentage of blood sugar in a diabetic animal lowered when an extract containing insulin is injected, but such an injection into the skin of a normal animal causes an appreciable lowering of the percentage of blood sugar; and when the percentage is low enough (in the neighborhood of three-hundredths of one per cent.) the animal is sent into convulsions. The convulsions disappear upon the oral administration of glucose. The unit selected by Banting, Macleod and their associates was that amount of insulin, in the form of extract, which, when given subcutaneously (under the skin) lowers the blood sugar from one-tenth of one per cent. (normal amount) to four-hundredths of one per cent. Another, and physiologically interesting method of assaying the potency of the extract is to make use of the antagonistic actions of adrenalin and insulin. The former, the active principle of the adrenal glands, when injected into the blood, increases the percentage of blood sugar, whereas the latter, the active principle of the pancreas, as we have seen, lowers the percentage. The pancreatic extract is first injected and the fall in blood sugar noted. Then an amount of adrenalin is injected which will restore the percentage of blood sugar to the original figure. Since adrenalin can be made synthetically, and in a very pure state, this gives us a basis for quantitative analysis.

The selection of a unit such as we have just described might seem at first sight a somewhat trivial matter, but it is really of great practical importance; for every sample that is sent to various physicians and hospitals in this country and abroad can first be very carefully assayed and the content of insulin determined, thus assuring us of active extracts of known strength.

The method devised by the workers of concentrating the extract and removing objectionable impurities is a complicated operation, but in principle it depends upon the preliminary removal of ferments, proteins, fats, and inorganic salts, alcohol playing an important role in these operations.

Of course, the more important aim is to actually isolate, in a chemically pure form, the active principle, the insulin and this problem is engaging the attention of some of the best chemists in the country. The task is a difficult, but not a hopeless one. We have analogies to draw upon. One of the active principles of the adrenals, adrenalin, has not only been isolated but actually synthesized in the chemist's laboratory. The same is true of thyroxin, the active principle of the thyroid; and both the thyroid and the adrenals are ductless glands; so that there seems to be no good reason why the isolation and synthesis of insulin should not be added to the number.

In the meantime, physicians using the active extract prepared by Banting and his colleagues are loud in their praises. It does not make a sick man well to the extent that he can eat any, and as much, food as he wants, but it does make him distinctly better and certainly increases the assimilation limit of foods, particularly carbohydrates. The results so far obtained with it in the more advanced stages of diabetes, where the patient is in incipient coma and very near death, have

(*Continued on page 79*)

BOXING

Prepared by **William J. Herrmann**

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GUARDING AND BLOCKING

BEAR in mind that, in a general way, the right arm guard for the head, or, in analytical terms, the regulation inside parry with the right arm, is primarily the first parry to learn thoroughly.

It is superior to and has distinct advantages over the "upward guard" just referred to, as well as over the "outside," "cross" and "opposite" parries to be described later.

The weakness of the "upward" guard in comparison with the regulation right arm guard is that in case your opponent, by means of a clever feint, tricked you into taking an "upward" guard you, in consequence, will be in a less favorable position to safely get your guarding arm down again in time to protect the target he induced you to unduly expose. However, all forms of parries and blocks must be studied and practiced in order to acquire a versatile as well as effective defense. So put in practice mastering the "upward" guard in order to be able to use it in case combat conditions may warrant it, even if, on the whole, it is a less desirable form of head parry to use for general purposes.

After you can use the regulation right arm inside parry in good form and style, then learn the regulation left arm guard, or, in analytical terms, the left arm inside parry for the head. This parry is based on practically the same principles as its counter-like parry, the right arm inside guard for the head.

The left arm inside parry for the head is used against a right hand blow at face in contra-distinction to the right arm inside parry for head, which, as stated before, is used against a left hand blow at face.

Consequently, in using a left arm inside parry for the head against a right hand punch at face, observe in a general way the rules and principles given for using the right arm inside parry with the movements reversed, deflecting the attacking right hander past your left side with your left arm in a manner similar to deflecting a left hand blow off past your right side with your right arm. Immediately after parrying be sure to recover in good form and style, ready if necessary, to parry again in case you failed to combine your left arm parry

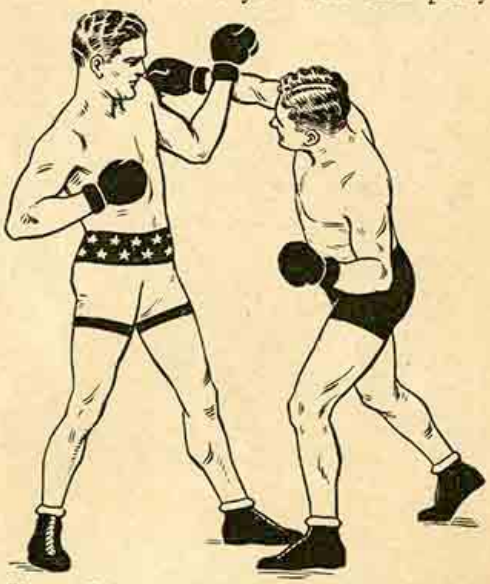

Fig. 1. Left arm guard against right arm swing to jaw.

with a right hand counter to either face or body.

In a general way the left arm inside parry for the head against a right hander to face is comparatively not equally as safe nor as good a parry as is the right arm inside parry to the head against a left hander at face, in that you are more likely to uncover your body in case your opponent was only feinting you out. Nevertheless, it is one of the important parries for the head made with the left arm, and in consequence every effort must be made to master it. Even though there is less necessity of using a left arm inner parry for the head against right handers, in comparison to using a right arm inner parry for the head against left hand punches at the face. This is due to the fact that there are far more effective measures applicable to offset a right hand blow. Nevertheless, be sure to master the left arm inner parry. There is no doubt you will have plenty of occasions to use it effectively.

Also learn to use both the right arm inside parry as well as the left arm inside parry as a defense against blows at the body. Body blows not properly guarded are damaging punches no matter how well you may have been trained nor how good a condition you may be in. Of course, it is understood that in using an

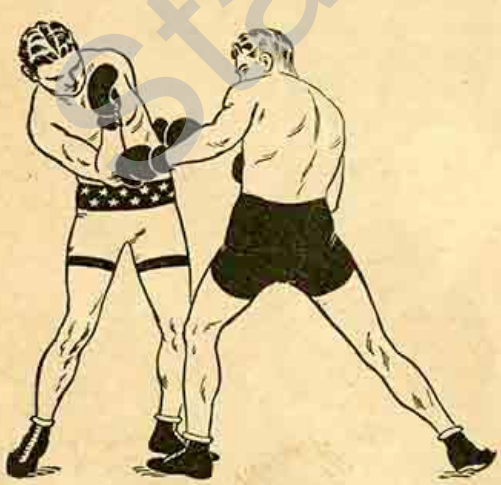

Fig. 3. Right arm block against opponent's left hook to body.

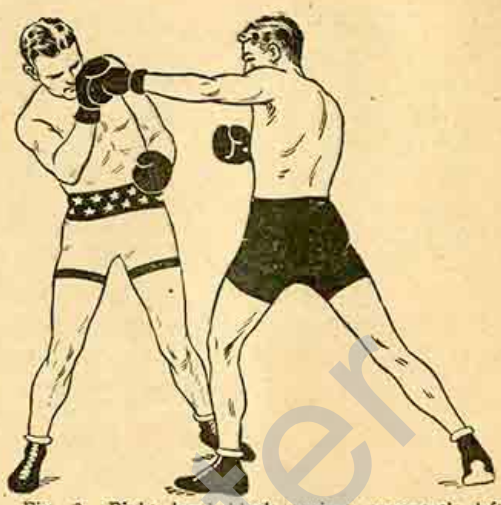

Fig. 2. Right hand block against opponent's left hook to jaw.

inner parry against a punch at the body, the parrying arm must move in a diagonally downward and not in a diagonally upward direction, as it does when guarding the head or face. Likewise in using an inner parry against a blow at the body the glove of the guarding arm is below, not above, the elbow, as when parrying a blow at the face. Holding the forearm on a slant covers more of the target than when forearm is held in a horizontal position.

The same principles apply to the left arm inner parry for the body against a right hand body blow. Of course, in using a left arm inner parry for the body against a right hander at the body you deflect the right arm body punch in a downward and outward direction past your left side, in contra-distinction to a right arm inner parry for the body, which deflects the attacking left arm downward and outward past your right side.

While on the subject of inner parries for the body, let it be understood that neither the right arm inside parry for the body nor the left arm inside parry for the body are by any means the most desirable form of parry to use as defense against every body punch. They are introduced here in their place as one of the forms of parries used against blows aimed at the body and should be studied, practiced

and mastered in order to become familiar with and expert in the use of all forms of guards, blocks and parries as conditions for the moment may be such that no other form of defense is available.

One important reason why these two low-line parries are not particularly safe is the fact that they necessitate lowering the fist of guarding arm below the elbow, a handicapping position in case your guarding arm was drawn down by a clever feint made in order to induce you to unduly cover your body at the expense of your head.

The right arm block for the body and the left arm block for the body to be described later under blocking, are far superior as far as forms of body defense with your arms are concerned. Although most forms of either blocking or guarding, stepping back out of reach of a punch or retreating are also forms of defense against blows at the body, nevertheless one cannot always be continually retreating, therefore all forms of parries with the arms must be mastered in order to cultivate a varied defense. All the various methods of defense against certain punches will be described in another chapter.

Don't confuse blocking with parrying. In parrying you cuff the attacking arm aside in order to deflect it off its intended course, whereas in blocking you don't deflect the blow, but rely on stopping, blocking or catching the punch by interposing your open glove, fist, forearm, elbow, upper arm or shoulder of the defending arm between the oncoming punch and its objective.

The Right Hand Block

Just as the right arm parry for the head, described at length in the last lesson is the most common form of parry, so likewise is the right hand block the most usual form of block used against a straight left lead at face.

To use a right hand block against a straight left at face, palm the oncoming punch in the open glove of your right hand. Palming with the open glove obviously gives you double the protecting

Fig. 4. Right hand block against opponent's right upper-cut to jaw.

area of a closed fist. Besides the open glove enables you to use the defending hand with greater speed, dexterity and precision.

In blocking a straight left to jaw the thumb of the right hand glove is moved close to and as high as your left shoulder or your jaw with the palm of your right hand glove facing outward. Let your right forearm be in a diagonal position across chest with your elbow down and close by your body.

If, in addition, you slightly lower the chin while at the same time you slightly raise your left shoulder you will further enhance the effectiveness of your block. Lessening the force of the punch by a slight recoil of your body, while at the same time turning your body just a little to the right by a slight pivoting motion on your feet, are additional factors of safety if necessary.

Don't labor under the wrong impression that merely holding the padded side of the boxing glove up against your jaw is sufficient protection in itself, because

a "knock-out" can be scored in spite of it. The idea of blocking is not merely to interpose the blocking glove between the oncoming punch and its objective, but to properly, cleverly and effectively cushion the punch with the least expenditure of energy. It is surprising what very little exertion is needed to properly block a punch.

Of course, it stands to reason that in blocking a blow with considerable power in back of it, it must correspondingly be met with greater resistance in order to prevent your own blocking hand from being driven back hard against your own face or body. So don't make the error of using your face for a "back-stop" when blocking.

Also avoid moving your body forward in attempting to stop a punch. Neither uncover yourself by shoving your blocking hand out too far forward to meet the oncoming blow or you will be at the mercy of a man who was only feinting you out.

Immediately after blocking recover to position in order to again be ready to instantly guard or hit as may be necessary, in case you failed to combine your block with an effective counter. Learn to guard and block without making any unnecessary change of ground, so as to be able to confidently do so when no other means of defense is possible.

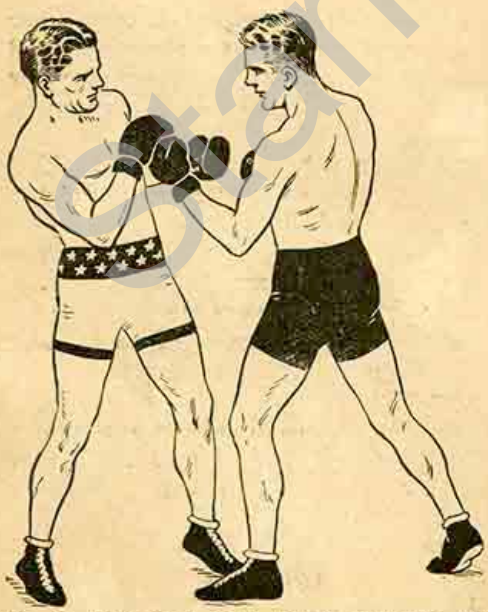

Fig. 6. Right hand block against opponent's left upper-cut to jaw.

Fig. 5. Right arm block against opponent's right upper-cut to body.

In first learning to guard and to block be careful you do not get into the habit of closing your eyes, blinking or turning your face away from the oncoming punch. This is a common fault of beginners and must be avoided. Be sure you keep your eyes open. Check any tendency to wince against any punch before it becomes an established habit, difficult if not impossible to entirely correct.

Learn to block safely and cleverly in a quick, clean and easy manner. Don't block in a clumsy, awkward sort of a way or you will not only sacrifice speed and safety, but unnecessarily waste your energy as well. Don't uselessly follow wild punches with your blocking hand. Let them pass by.

The right hand block for a right hook to jaw is pretty much the same as the right hand block for a left hand jab, only you don't need to turn your body slightly to the right. Catch the right hook in the palm of your right hand. Be sure you don't raise your right elbow. Brace your

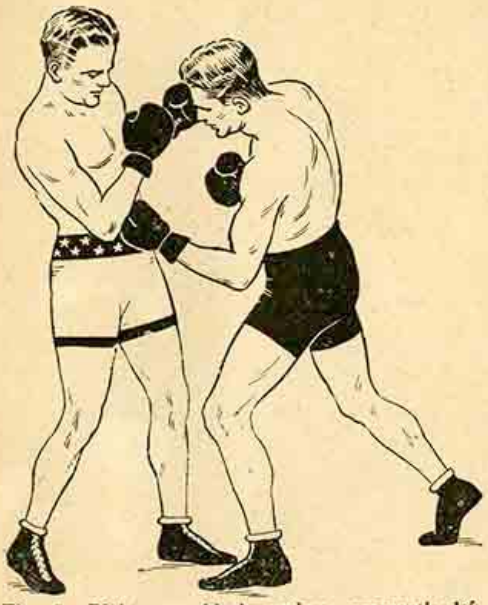

Fig. 7. Right arm block against opponent's left upper-cut to body.

blocking arm just as you stop the punch. Don't tense your muscles nor cushion the punch until the moment you stop the blow. In blocking body punches you can palm with your open right hand glove a left hander at your body, or, vice versa, palm with your open left hand glove a right hand body punch. You can also block a left hand punch at your body by catching the punch at your left elbow instead of blocking the blow with your right hand.

As you see the punch coming turn slightly to your right on the balls of your feet at the same time drawing your left fist back and placing the left forearm diagonally across the " mark " in order to catch the brunt of the force of the blow on the fleshy part of your arm at the elbow. Be sure you keep your left fist above your left elbow.

In blocking a right hook to body you assume about the same position as when blocking a right hook to jaw with your right hand. The main difference is that you block the punch with your left elbow instead of catching the blow with the palm of your right hand.

As, at first, you can't afford to take any chances as to whether the oncoming blow is intended for your body or your jaw, be prepared to block the punch no matter what point may be its final destination.

Try to develop guarding and blocking to a righ degree. Whether guarding or blocking, keep a sharp lookout for any opening that may suddenly present itself.

With practice you will be able to make clever use of a wide diversity of guards and blocks in order to enable you to use them as a basis to manoeuver or play for good opportunities to effectively combine all forms of guards and blocks with telling counters to be described in the practice lessons that follow.

You will never become a real clever boxer unless you can combine defense and offense effectively. Keep your man guessing as to what you intend doing in the way of defense with your arms. Let the defensive move you use be the one your opponent least expects. The more of a surprise the better. In other words, if your opponent thinks you are going to parry a straight left at your face with a right arm inside parry, fool him by using a cross guard and counter heavily on his body or block it with your left hand and cross him with your right to jaw, or, better still, don't guard nor block at all, but head slip his punch to your left

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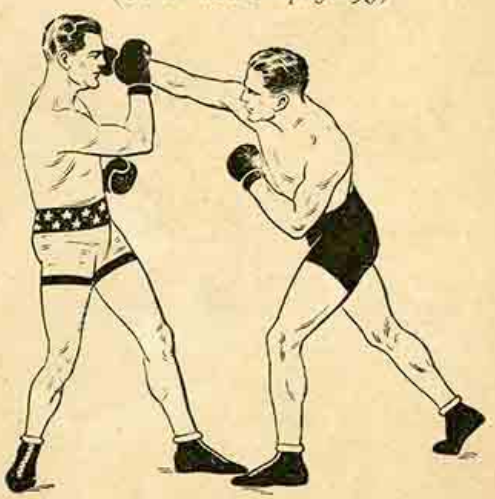
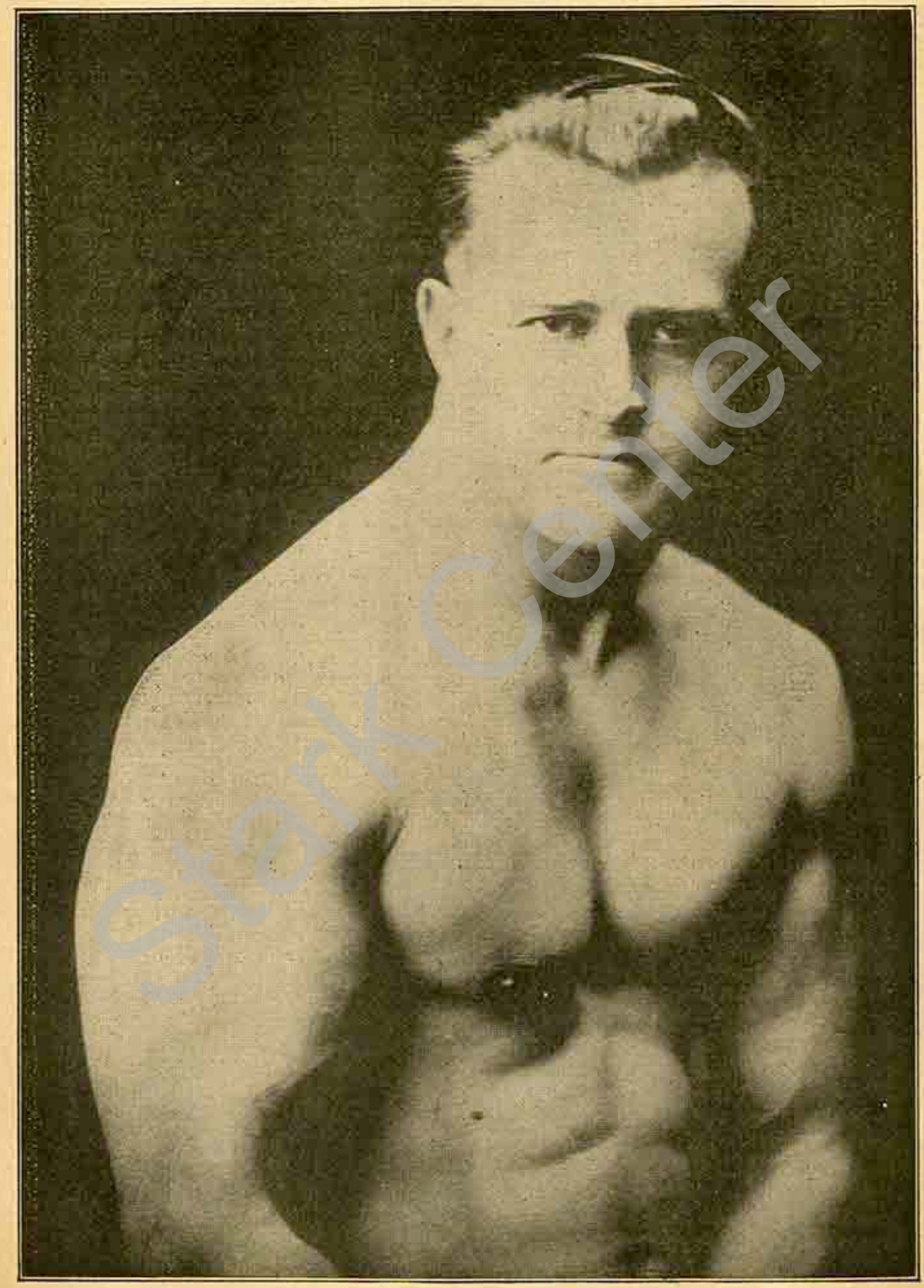


Fig. 8. Opposite guard with right hand, against opponent's right lead to face.



Earle E. Liederman—The Acme of Physical Perfection

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.

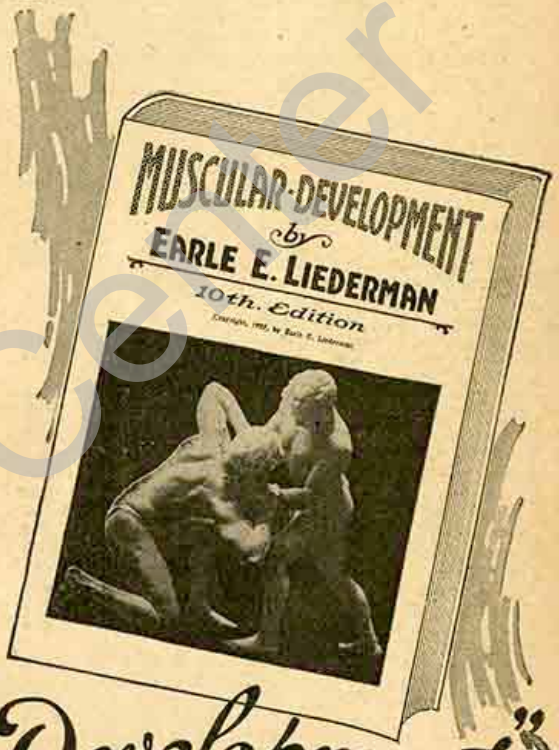
Modern science has taught us that we must keep our bodies physically fit or our mental powers will soon exhaust themselves. That is why the successful business man resorts to golf and other active pastimes.

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.



Send For My New 64 Page Book— "Muscular Development"

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. 709 305 Broadway, New York City

EARLE E. LIEDERMAN
Dept. 709, 305 Broadway, New York City

Dear Sir:—I enclose herewith 10 cents 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 .....

ADDRESS .....

CITY..... STATE.....

THE MAT

Dear Editor:

For some time I have thought that in an ideal standard of measurements, there should be a sliding scale, by which the limbs should be proportioned to the body, for instance, the flexed biceps to normal chest, thigh to hip measurement, etc., also the calf to the thigh.

Of course such a standard of proportions could not be rigid, but approximate, and I do not know what the ideal proportions should be.

But in emphasizing many measurements of the athletes, I have noticed that the flexed biceps is close to ⅜ of the normal chest. Sandow's right bicep was exactly this ratio in measurement, you gave in letter to me, also in STRENGTH. Some very few reach even an inch above the ⅜, but more go a little below it.

I have also noticed that the calf is close to 2/3 of thigh, some above and some below, and that the thigh is close to 3/5 of the hip measurement. In Jack Staton's measurements given in March STRENGTH, it is exactly 3/5. Some very strong men seem a trifle under that.

I have become somewhat accustomed to using these different proportions, 3/8, 2/3 and 3/5 in "checking off" any new measurements I see.

I wrote to you in 1917 about the 3/5 ratio of the thigh to hip, and in reply you said, "Your idea of proportion is a very good one," and you gave Sandow as evidence, stating that his hip measurement was about 39 inches.

I do not know whether above or below 39 inches, but if exactly 39 inches, it would make his thigh about one inch over the 3/5 ratio.

The hip measurement does not seem to be given as often as other measurements, but 1½ inches above the 3/5 is the very most I have found in any case with two exceptions. And these two were so far above the 3/5 and so extraordinarily unusual that I could not understand it, and have been much puzzled.

One instance was Waldon Adams' measurements given in STRENGTH for January or February, 1915—hips, 36, thigh 24. This is about 2½ inches above the 3/5.

The other instance is in Fred Rohde's measurements, which are given in March STRENGTH for this year—hips 35½, thigh 25 inches. This is more than 3¼ inches over the 3/5 ratio. This makes his hips some 3½ inches less and his thigh ½ inch more than Sandow's, and 1 inch more than Arthur Saxon's.

How can this be? Could there have been a mistake in the figures, for his thigh is 23 inches instead of 25?

Even then it would be very large (1.7 inches over the 3/5), and it would make the proportion of his calf to his thigh very close to the 2/3 ratio.

Or if the 25 inch thigh is correct, could it be that in his case and Adams' also, that the thigh was flexed, thus making it much larger than according to the ordinary or common method of measuring?

Can you give me any light or explanation? You have answered some other questions satisfactorily in the past. If you can do so again, I thank you in advance.

Yours truly,

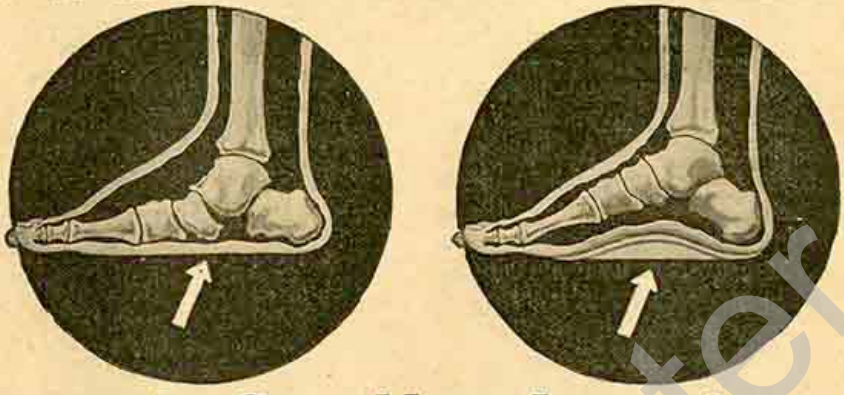
W. C. HASKELL.

I wrote Mr. Haskell a personal letter in reply to the above, but I think that the subject he brings up is one that should interest all of you. I know that most men and boys who have taken up physical exercise for the improvement of their bodies, are more interested in becoming splendidly developed and well proportioned than in making record lifts.

Personally I am inclined to believe that Mr. Haskell's ratios will come pretty close to being the correct standard for a perfectly built male with average size bones; but I also believe that a man with unusually large bones can develop arms that are more than ⅜ the size of the normal chest, and thighs that are more than ⅗ the size of the hips. Even in undeveloped men Mr. Haskell's rule that the calves should be ⅔ the size of the thigh seems to hold. In the last few years I have examined measurement charts sent in by several thousand men and boys, and if I was asked to give an *average* measurement, I should say that it would be 36-inch chest, 13½-inch upper arm, 14-inch calf, 21-inch thigh and 35-inch hips. In fact, out of every ten charts received, there will be at least three which show exactly those measurements. You will note that in this average size the upper arm is exactly ⅜ of the chest measurement, and that the calf is exactly ⅔ of the thigh, and the thigh exactly ⅗ of the hips.

It would be easy to give the measurements of many celebrated athletes and strong men who vary considerable from Mr. Haskell's rule of proportion, but just the same it is a very safe rule to go by. The average young fellow who goes in for body building exercise increases the size of his upper arm and his thighs more rapidly than he increases the size of any other part of his body. As a matter of fact, it is a cinch to develop a big upper-arm, because there are exercises which develop the arm muscles without causing breathlessness or fatigue. Consequently, many beginners fall into the error of spending the greater part of their exercise period at movements which develop

No More Foot Pains!



Thousands Say New Invention Banishes Every Ache—Instantly!

No braces; no straps; no metal; no rigid appliances; no bandages; no trouble or bother of any kind. Yet every pain, twinge and soreness disappears instantly—as if by a touch of a magic wand!

NO longer need most of us suffer the tortures of tired, weak, aching, burning feet! For foot specialists have perfected a marvelous new device which, usually causes every pain and ache to disappear instantly.

No matter how long you have suffered, this new invention is positively guaranteed to relieve you completely of all foot misery, or it costs you nothing!

Agonizing pains in the arches, instep, ankles, legs, toes and heels are at once relieved and you walk around with never a thought of foot pains. It's just as if you were given entirely new feet.

Why Pain Disappears Instantly

Science has proved that 99 of every 100 foot pains are caused by faulty arches.

Now your arches—which are the "wagon springs" of your body—are held in place by certain muscles. But frequently these muscles become weakened so that the bones of your arches, under your weight, are forced out of place. Then you begin suffering all the tortures of fallen arches.

Yet, no matter how sore your feet may be, this new device at once raises the flattened arches to their normal position, immediately relieving the unnatural pressure that is causing your foot misery, and bringing you glorious foot comfort. The immediate relief from pain should actually amaze you!

How New Invention Works

In diagram above, "A" represents a thin layer of soft flexible leather. "B" is a wonderfully resilient pad of specially compounded Russian Sponge Rubber. The supports conform to the exact contour of the foot in every position — not only bringing you instant comfort, but strengthening the foot muscles with every step you take.

The old way of treating fallen arches was to use rigid metal props, which usually weakened the arch muscles.

But this new invention, which can be slipped into any style shoe is entirely different. It is called the Airflex Arch Support, and is in the form of a light and springy pad, scientifically formed to the natural arch of the foot. Each pair is made of specially compounded Russian Sponge Rubber—which has been surcharged with air. They are so light and flexible that were it not for the instant comfort they bring, you would never be aware of their presence.

As you walk on them, this springy rubber exerts a marvelously gentle pressure at all points. This instantly raises the fallen arches to their proper position and automatically adjusts the displaced arch bones. Also as this light springy rubber yields to your weight it reproduces exactly the natural spring of your arch! Its constant compression and expansion at every step massages, exercises and strengthens the muscles in a natural way, thus quickly bringing back their old-time vigor and strength.

The New Airflex Arch Supports are positively guaranteed to banish all pain and build up the arches—and if after trying them you are not more than delighted with results, they cost you nothing.

SEND NO MONEY

Don't send a cent in advance. Simply fill in coupon, giving the exact size of your foot as instructed below. Don't hesitate to order by mail, for every day we are fitting hundreds this way. In spite of the fact that these supports have regularly sold for $3.00—when the postman hands them to you, just pay him the amazingly low price of only $1.95 (plus few cents postage) in full payment. Slip the supports into your shoes. Try them five days. Then if you are not pleased in every way simply return them and your money will be instantly—and gladly—refunded without question. Mail the coupon today—now—and say "Good-bye" to foot pains forever. Thompson-Barlow Co., Inc., Dept. A-409, 43 West 16th Street, New York, N. Y.

Low Price Introductory Offer Coupon

If not sure of shoe size, stand on piece of paper—trace outline of stockinged foot. Hold pencil upright. Enclose this with coupon.

THOMPSON-BARLOW CO., Inc.
Dept. A-409
43 West 16th Street
New York

Send me, at your risk, the proper pair of your new Airflex Arch Supports. I will pay the postman $1.95 (plus few cents postage) with the full understanding that there are no further payments. If I am not satisfied after wearing them, I will return them in five days and you are to refund my money without question.

Name .....

Address .....

City and State .....

Size of Shoe .....Width ..... Men's [ ] Women's [ ]

the upper-arm. It is easy to increase the size of the chest three or four inches just by developing the muscles on the upper back. Exercises which develop the thighs make a great demand on the lungs. A man with big lung power will develop big thighs without much trouble, but the short-winded, small-lunged man gets out of breath after he has made comparatively few repetitions of a thigh exercise, and his tendency is to quit and go on to an exercise which is less exhaustive. It has often been a cause of annoyance to me to find that so many of you spend a lot of time at exercises for the part of the body which is already well developed, and that you neglect the other parts of the body. Time and again I have found that a pupil who has fairly good arms will spend almost all his time in trying to make his arms still bigger, whereas what he *should* do is to spend three-quarters of his time in trying to bring the rest of his body up to the standard set by his arms. Sometimes we have readers write us and say, "I am leaving out exercises blank and blank because they seem hard for me." The very fact that those exercises seemed hard should have told them that the exercises they named were *the very ones they most needed.*

If a man specializes on arm exercises, he will find that before long his upper arms are more than ⅜ the size of his normal chest, and this is so even if he has increased his chest measurement by adding layers of muscle outside the ribs. No man can get a really big chest unless he makes a definite attempt to increase the size of his rib-box, which can only be done in a full-grown man by increasing the length and elasticity of the cartilages which connect the ribs with the breast bone. Sandow had a big rib-box, and outside his ribs he had a magnificent covering of muscle, so that his 17-inch arm and 44-inch chest went well together. I have seen athletes who had 17-inch arms and chests measuring only 41 inches, and those men lacked the beautiful proportions of Sandow, and what is more important, they were far below him in strength and vitality.

The size of the hips is controlled primarily by the size of the pelvic arch. If the pelvic arch is small, a full-grown man can never get very large hips, even if he develops all the muscles which surround the hip bones. Both Rohde and Staton have rather narrow hips, which is one reason why they appear so beautifully proportioned. Both of them have wonderful thighs. Sandow's thighs were beautifully shaped, not extraordinarily large. Saxon had thighs about the same size as Sandow's, but his hips were bigger. It is quite believable that Rohde, though a small man, has bigger thighs than either Sandow or Saxon had. I have known athletes whose thighs were even more remarkable than Rohde's, and who went even more beyond Mr. Haskell's rule that the thigh should be ⅝ the size of the hips. My own idea is that wide hips are more important than broad shoulders, but it would take me a long time to explain my reasons. I could go on indefinitely discussing Mr. Haskell's subject, but I would rather hear what some of you think about it.

As the conductor of this department, I am continually in receipt of letters asking for information or training advice, and signed only with the writer's initials or with some such phrase as "A Physical Culturist" or "A Would-be Strong Man." I never use the names of my correspondents without their permission, but at the same time I cannot spare the time to give any attention to these unsigned letters. I do not see why you should be ashamed of your own names. I do my best to answer every letter that comes to me. Hereafter letters signed only with initials or pseudonyms will be consigned to the waste basket.

* * *

Battle Creek, Mich.

Dear Sir:

As an elderly reader of your magazine, and as one who has passed the athletic period of life and who places more value on health than on strength,

A. Saxon—the Incomparable Lifter

(*Continued from page* 56)

enormous strength and his unquestioned honesty.

His marvelous lifting exhibitions inspired thousands of men and boys to try lifting on their own account; and his insistence on always lifting as much (or more) than announced, and his willingness to comply with the most rigid rules, not only set a new standard in professional circles, but also encouraged all amateur lifters in the English-speaking countries.

So far as I know Saxon never did any teaching or tried to capitalize his popularity as a lifter. A couple of books were published over his name, but I have always had the idea that he collaborated with Mr. Inch in preparing these books. That is not to the discredit of either of them, for the volumes are excellent text books on lifting and are full of common-sense.

Saxon never pretended that he had acquired his strength through any "secret system" or any mysterious apparatus. He acknowledged that even as a boy he was far stronger than the average, and that he added to his strength by the hardest kind of practice with the weights. He was not a physical giant, as were Cyr and Apollon, but he combined very unusual muscular strength with a great deal of skill and science. No man of his weight and inches has ever been able to make as many varied and phenomenal lifts.

He cheerfully placed his knowledge of lifting at the disposal of any enthusiast he met. He would even explain his methods to his rivals, and spent many an hour giving unpaid advice to beginners at lifting. All he ever asked was a fair field and no favor. He had a weakness for practical joking, and his favorite diversion was to make a huge lift and then to discomfit some ambitious pretender by telling him that the bell weighed much

(*Continued on page* 84)

may I ask you to ocasionally say in your pages a few words about the evil effect of drinking the fearful stuff purveyed by the enormous army of bootleggers.

Some one should call the attention of the younger generation to the evil of ordinary drinking, and to the positive menace of drinking the imitation stuff now peddled in the guise of whiskey. I think that if you will follow my suggestion, you will do more to conserve the health of the nation than by all your articles about athletics and bodily development. Please do not use my name if you publish this letter.

This magazine, and everyone connected with it, is more than willing to do everything possible to help the enforcement of the eighteenth amendment. Heretofore I have purposely ommitted any reference to the present frightful conditions, because I honestly believe that those conditions are largely the result of too much newspaper notoriety. Just so long as newspapers and magazines continue to print pictures and stories making a joke out of violations of the law, just that long will the unthinking members of our community continue to take the eighteenth amendment as a joke.

Actually I have among my friends and acquaintances a number of men and women who are now drinkiing steadily, although in the pre-Volstead days they never touched a drop of liquor. Through the lack of ordinary common-sense, they are becoming habitual drinkers. Most of them had reached maturity without ever having tasted liquor, and they started their drinking at social gatherings because they thought it was the smart thing to do. This is the same kind of mentality that makes a small boy sneak behind the woodshed and smoke a cigarette, because he thinks that the mere act of smoking confers manliness upon him.

I disagree with my correspondent when he says that the trouble is with the young people. It is not. The trouble is with the well-to-do business man who is going around bragging about his ability to get illicit liquor, and who likes to pose as a sport before his associates. Only those with plenty of means can afford to buy liquor at bootleggers' prices. Even imitation stuff costs four or five times as much as the genuine article cost in 1915. Young boys and girls, even at present-day wages, cannot afford to carry flasks unless they are helped out with allowances from their parents. If a business man patronizes a bootlegger, perpetually carries somethiing on his hip, drinks himself and encourages his friends to drink, I am not surprised if that man's son becomes a drunkard. If the business man's wife takes her cocktail or highball when the family gives a party, then I fully expect to find the daughter of that family drinking from her escort's flask when she goes to a dance or for a joy-ride. Parental influence can make or unmake the character of children. Nine times out of ten the children are governed by their parents' ideals more than by their parents' commands, and if a boy of twenty and a girl of eighteen sit at their family table and daily hear their respected father making jokes about bootlegging, and see their beloved mother in a half intoxicated condition, it is foolish to believe that those young people will ever see anything either unlawful or harmful in patronizing bootleggers or consuming their wares.

Reform the parents and you will not have to bother about reforming the children.

I think that a large part of the blame for the drinking epidemic should be laid at the doors of the newspapers and the theaters. The personal habits of a nation are formed more by popular opinion than by force of law. If the newspapers and the theaters had canned the " funny stuff," and taken prohibition seriously, bootlegging would now be as disreputable as burglary. It is always easier to get a laugh than to preach a sermon. The right thing to do is often the hard thing to do. If anyone of you want to help correct this great evil and to help our President and his administration enforce the law, you can best do it by letting your friends see that you do not consider either bootlegging or drinking to be signs of good citizenship.

Insulin:—A Cure for Diabetes

(*Continued from page* 66)

been particularly gratifying. Formerly a patient in such a condition has been given up as lost; now some of the recoveries that have already been recorded are little short of miraculous.

Tempted as we are to grow wildly enthusiastic over so great a discovery, we must be sufficiently fair-minded and critical to point out present drawbacks. This is all the more necessary since the reports that have crept into the daily press give the impression that in insulin we have *the* panacea, and thousands of diabetic sufferers have been led to believe that they will be completely cured within a day or two. In the first place, the injections have to be kept up indefinitely, two or three of them a day; and injections through the skin are not as easily tolerated or as easily manipulated as are tablets taken by mouth. The attempts to give extracts by mouth have not been very successful, since most of the active substance seems to be destroyed before it reaches its destination. Then again the quantity of extract available is limited. It takes not only time and labor but much money to prepare potent extracts. Until the insulin is actually isolated and what is even more important, until the substance can be prepared synthetically, it does not seem likely that the supply will ever approach the demand. The present dietetic treatment of diabetes, therefore, will not be immediately displaced by insulin treatment; the latter, however, will act as a valuable supplement to the former, particularly in the severe cases of the disease, where the chances of the patient improving by regulating the diet alone are slim.

And so there opens up another glorious chapter in the history of medicine and chemistry—a chapter, if you please, made possible by preliminary experiments on *animals*.

Readers' Service Department

EVERY month of the year can boast of possibly one or more sports. September certainly has its share.

The opening of schools and colleges marks the beginning of another year of athletic activity. Every school and college in the country as well as many clubs, churches, and business organizations will support Football teams which will endeavor to excel on the gridiron. It is the game for sturdy, red-blooded Americans. It brings out the real "stuff" in a fellow, and it develops the body more thoroughly than most other sports.

Then there are Soccer, Rugby, and Lacrosse. These games are played more in England and Canada than in the United States. The players must possess skill and a good pair of lungs and legs.

In September the Cross Country Running starts. This sport is coming into prominence more and more each year. Practically every large community stages a cross country race or a Marathon, and hundreds of men turn out.

Then there is another sport which really belongs to the months of October and November, but it may be well to mention it at this time. There are but few of us who do not enjoy Gunning. Have you ever shot rabbits, ducks, or quail? Now is the time to get your guns out of the attic or closet and give them a thorough overhauling.

This department has been created to serve the readers of STRENGTH. We receive inquiries daily from all over the country regarding everything from: "How can I cure fallen arches?" to "Where can I buy a fencing outfit?"

Each of these sports requires a special equipment.

For football one needs a regulation suit, jersey, headgear, supporter, shoulder and hip pads, stockings and shoes.

Soccer, Rugby, and Lacrosse players wear uniforms which are very similar. A heavy jersey, trunks, supporter, stockings and shoes are the essentials. A headgear, shoulder and knee pads are generally worn while playing Rugby. Each of these games is played with a different kind of ball. In Lacrosse a special racket is used for catching and throwing the ball.

Cross Country Running calls for a jersey, trunks, supporter, and special track shoes.

For all of the autumn sports a nice warm woolen sweater is a necessity.

Gunning is a great sport and also a rather expensive one. One's pocket book regulates the hunting trip. Shot guns, rifles, cartridges, hunting suits, high lace shoes, dogs, tents, cots, blankets, sleeping bags, axes, and cooking utensils comprise most of the equipment.

Very often people are induced to buy goods of inferior quality, because they do not go to the proper places to make their purchases. Now, if you are particularly anxious to secure something which has been mentioned here, it might be to your advantage to write a letter to R. L. H. of STRENGTH magazine. You will, in turn, be referred to a reputable place where you can get just what you want.

This is your department; you should take advantage of it. R. L. H.

Outdoors at Its Very Best

(*Continued from page* 16)

Now you have the opportunity if you would use it, the chance to lose yourself for some few days at least and learn from a book that is open if your own eyes can see.

I have intended this for an article about a camping and hiking trip but it seems to me that these are merely the accessories. Surely it can hardly be construed as a preachment. It is an effort to point out that there is a way to lift your eyes above the narrow horizon and see yourself and the world that is living around you. It is a creed, physical, mental, spiritual, a reiteration of the legend that we must return to the earth at times for strength in all three. Think it over and you will see why readily enough.

After all, isn't that camping trip you have been wanting and talking about for so long merely an excuse to get away from those things which have been burdening you down? Doesn't it have its deepest appeal in the longings of the primitive that is in your nature to escape from the seemingly endless structures of false values that we have all built up around ourselves until they tower on all sides so high that we are afraid to withdraw our puny support for fear they may topple? And they will topple. Given a chance, given distance and proper perspective, and they will come down to earth, leaving the man, you and me, to stand forth as we should, individuals, human beings, masters of our own destinies more than most of us realize, better specimens physically and mentally.

A few things more: do not take this trip with the definite thought that you are doing it for the sake of your health, for strength, for anything in particular. The deep secret of it is that you are doing it for no particular reason, you are not going to be disappointed if you are not going anywhere and do not get there.

THE NEW AND ENLARGED

October Number of

Strength

will be edited by *Carl Easton Williams*

who has been editor of *Physical Culture* for the past six and a half years and during that magazine's phenomenal growth.

Beginning with the October number "STRENGTH" will be published in the large standard flat size, of 429 lines per page, which has been popularized by such magazines as the *American,* the *Cosmopolitan, Hearst's International* and many others.

The price will be twenty-five cents per copy, two dollars and a half per year, which will make it possible to give the reader a magazine of the highest quality and artistic value.

Future numbers of "STRENGTH" will include Mr. Calvert's invaluable articles on physical training, and the other noteworthy features that have already made this magazine popular with its readers, but in addition will include contributions by such writers as Albert Edward Wiggam, Alfred W. McCann, Wilbur Hall, Walter Camp, Fred C. Kelly, Elon Jessup, A. F. Harlow and other authorities on health, keeping fit and personal efficiency.

We all want more light. We all want to know better how to live. We want to get more out of life. The finest minds in the world will teach the readers of "STRENGTH" the great lessons in the art of living which prepare one for achievement and happiness. We will show you the way to the simple life, the vigorous life, the clean life, the successful life and the happy life.

Save $1.00

By Sending Your Subscription Now at the Old Rate

After October First You Will Pay $2.50 Per Year for "STRENGTH"

25 cents per copy **Canada, $2.75** **Foreign, $3.00**

Of course it is not a mere matter of your saving a dollar. It is first a matter of your receiving a magazine so much better that all considerations of price will be out of place. You will only be able to appreciate what this means when you see the new and enlarged October number.

It will be the policy and purpose of this magazine not only to offer practical help in building strength, but to idealize its meaning, giving it that appeal to the imagination which will make our message all the more stimulating. For strength is the first essential of human life. It means everything. It is the basis of mental vigor, fortitude, courage, confidence, resistance, steadfast purpose. To be clean and strong is the foundation of a happy life. We are going to make this conception of human life a national ideal.

"STRENGTH" will be a clean magazine. There will be nothing in it to offend those of refinement and good taste. It will be wholesome, artistic, stimulating, inspirational—and most of all, helpful. Wait and see our big October number.

Send in your subscription or your renewal now, and make sure that it is done. Don't wait until the last day, or you will slip up on it. No subscription will be accepted at the old rate after October first. *Save that dollar.*

THE MILO PUBLISHING CO.

301 Diamond St. **Philadelphia, Pa.**

Arthur Saxon—The Incomparable Lifter

(*Continued from page 77*)

less than it really did. Saxon's fun came when the other fellow tried to lift a 300-pound bell which had been announced as 200 pounds or less.

He never went in for muscle-posing, and evidently considered it a bore to have his picture taken, that is, unless he had a weight in his hands. To stand up and merely show his muscles was his idea of a dull time. He considered that the scales and not the tape measure was the true gauge of strength. He gauged his rivals by what they could actually lift and not by their bodily measurements.

THE SAXON TRIO

Arthur Saxon rarely gave a "one-man show." Apparently he preferred to have company on the stage. At first the Saxon Trio was composed of Arthur himself, a German by the name of Adolf Hilsberg, and Arthur's younger brother Herman. After a few years Hilsberg dropped out and was replaced by Kurt Henning (or Saxon) the youngest of the family. I know that many of you have the fixed idea that these "stage-brothers" are always of an assumed relationship, but Arthur, Herman and Kurt Henning were actually blood-brothers. The most prominent family trait is the very unusual conformation of the eyebrows and the shape of the eyes.

Herman was (or is) about 5 feet 8 inches in height, and Kurt about 5 feet 8½ inches. They weighed just about the same and rarely went below 168 or over 170 pounds. (Arthur was the same way. No matter how much or how little he trained, and no matter how much he ate and drank, or how much sleep he lost, his weight was always within a few ounces of 200 pounds.) Herman was unquestionably the finest-built of the trio; that is, he had the most statuesque figure and the most pleasing proportions. Kurt resembled Arthur, although he never had as much bone or muscle as his famous older brother.

Herman and Kurt were as close together in lifting records as they were in bodily weight. Each could bent-press about 265 pounds, could do a one-arm snatch of 180 pounds, and a two-arm jerk of 290 pounds.

Herman Saxon's measurements were:

Biceps, 16½ inches; chest expanded, 47 inches; forearm, 13⅜ inches; waist, 32 inches; chest, normal, 44 inches; thigh, 23¼ inches; calf, 15¼ inches.

Kurt's measurements were:

Biceps, 15½ inches; chest expanded, 46 inches; forearm, 13⅜ inches; waist, 31 inches; chest, normal, 42½ inches; thigh, 23¼ inches; calf, 16¼ inches.

An inspection of the pictures accompanying this article will show you that both Herman and Kurt had much more cleanly defined muscles than Arthur had. The picture of Herman on page 51 is one of the finest poses I have ever seen. In this position he manages to show his marvellous arms and shoulders, the great size of his chest, and his wonderful thigh development all at the same time. The picture of Kurt on page 54 accomplishes practically the same thing, although his pose is not nearly as easy and graceful as Herman's. In the side view picture of Kurt with the hands clasped behind the waist, you should particularly note the clean-cut outlines of the huge deltoid covering his right shoulder. Note how much more sharply defined it is than Arthur's deltoid in his picture taken in the same position.

THE SAXON ACT

While the Saxons exhibited continuously for more than ten years, they made very few changes in their act. When with the big circus they always did just about the same feats year in and year out, and those feats were the ones which appealed to the general public. When touring England and appearing in theaters in the smaller cities and towns, they were apt to vary their act, especially if they knew that there were to be a number of amateur lifters in the audience.

An English audience is much less bashful than the crowd in an American theater, and when showing in the English towns the Saxons never lacked volunteers from the audience.

If I remember rightly, their first appearance in America was in 1910. The circus opened in New York in the Madison Square Garden on a Monday. Saxon was very anxious that the American professional lifter should acknowledge the fact that he did a "straight act." So on a Sunday morning previous to the grand opening, Mr. Ringling allowed Saxon to give a special demonstration and invited all the professional lifters and physical culture instructors in and about New York City. Saxon insisted that these New Yorkers inspect and weigh every bell that he lifted. On that occasion he went through his regular act, and he made a "bent-press" with a bell which weighed 312 or 314 pounds, I forget which.

When I saw the show that year they opened by tossing heavy bar bells from hand to hand. Kurt made a one-arm snatch with a 150-pound bell and threw it clean over his head, and Herman, who was standing six feet back of Kurt, caught the flying bell in the bend of his elbow. They then brought out a long steel bar with a loop of chain hanging from each end. Two circus attendants were seated in the chain loops, holding the bar in their hands. Herman then stepped forward, bent over and placed the back of his neck under the center of the bar, stood erect, grasped the bar with two hands, and then with one sudden motion jerked the bell with the two men to arm's length above his head. Then he pivoted rapidly on his heels several times in succession. Next Arthur made his one-arm bent-press, which he accomplished as usual with the utmost ease. Following this there were one or two more bar bell lifts, which I do not remember clearly. After that they did

(*Continued on page* 88)

It's the Hips That Make the Figure

(*Continued from page 42*)

beauty of your own figure is by a rational diet and continual exercise. I long ago gave up the attempt of interesting women in gymnastic exercises, because I found that women have no interest in body-building exercise as such. The physical salvation of women lies in games, and every woman of middle age should try to learn and practice as many games as possible. It is always easier to persuade a person to do something pleasant than to coerce them into doing something distasteful. Why waste your time trying to persuade a woman to take a course in bending exercises, when it is so easy to get her to join a club and swim, or play tennis or golf? The question is not so much the kind of exercise to do as the *amount* you do. Six hours a week at tennis, golf or swimming is a hundred times more beneficial than 10 minutes a day (70 minutes a week) at bending exercises or calisthenics. Again, indoor exercises do not give a woman the kind of exercise which keeps her slender. One cannot get a slender figure by standing in one place, no matter how much one bends, or kicks or waves her arms. Outdoor exercises make you jump around, and they exercise all the important muscles at the same time. The muscles of the hips and waist get the proper reducing work when one springs around in tennis, or when one uses a vigorous leg stroke in swimming. Both the woman who wants to reduce and the woman who wants to build up should aim all the exercises at the muscles of the hips and shoulders, which control the movements of the arms and legs. By moderate eating and continual exercise any woman can have practically the same figure at thirty-five as she had at twenty-one. Moreover, she can retain the teeth, hair and complexion of early youth. *The one great thing is to prevent the hips from getting stout,* and the hips will not get stout if they are properly exercised. If once the hips do commence to get stout, then inevitably the abdomen, the upper arms, the upper thighs and finally the back will follow suit.

It is a mistake for a woman to aim for special development. Her ambition should be to keep slender by constant activity, and remember that slenderness is just as different from thinness as it is from fleshiness. Your figure will take care of itself if you are sufficiently active and properly nourished. Women have an irresistible tendency to beauty, and women's bodies respond much more quickly to right conditions of living than do the bodies of men. So if you are thin and wish to be beautiful, do not buy fat-producing preparations, but be sure and eat plenty of solid food and take part in outdoor games, and the beauty of figure which you desire will soon arrive. If you are stout, beware of diet, but be sure and cut out the sweets and go in for swimming, tennis and fancy dancing. A stout woman may never reduce herself to the proportions of a Diana, but she can become a Venus, and, what is more, she can retain the Venus type figure into her late thirties. And finally I wish to say that the reason a woman should specialize on exercises for the hips and waist is both because such exercises literally burn up surplus fat, and also because they act as a continual tonic and stimulant to the digestive organs.

Strength Phases

(*Continued from page 62*)

his back and walked a mile or more with it. As this almost staggers conception, I questioned him closely about it, but he said it had been published. He added that Hart has a 33-inch waist and a chest over fifty inches. Having

seen Hart in action myself, and barring, as noted, a conception of the possible and impossible, I haven't the slightest doubt but what the giant did pull off just some such feat.

The trouble with physical culture as applying to weight lifting is that the popular conception thereof has always been as relating to the strong man idea. Excessive or intensive training with weights is no worse than a like application in any other line of athletic life—as applied. I have been particularly interested in Professor Lange's articles on physical development as he has apparently applied them at Notre Dame. Progressive weight lifting has been actually held in the "dark ages" in American college life—preached against almost as a "black art"—with nothing good and all evil to ensue from indulgence therein. The average "gym" work in American colleges is more or less a hit-and-miss proposition, chiefly because of its lack of "holding" power. Aside from the many students who turn to the gym for winter work, there are many who "exercise" without going in for any intensive branch of athletics. It would be an uplifting blessing if the control boards in our universities and colleges would follow up Professor Lange's lead and install a department of athletic work in their gymnasiums along the lines of scientific progressive weight lifting and development. I don't in the least mean to encourage turning out weight lifters or "strong men" in the accepted sense of showdom, but I do mean to teach students the art of real development of their bodies under sure and modern weight science. There are thousands and thousands of young fellows in our colleges who haven't the slightest idea or suspicion of such work and its possibilities to build them up.

Judgment in Exercising

(*Continued from page* 48)

of the small of the back and the opposing muscles on the abdomen. Also the act of holding the legs stiff and straight, causes a distinct contraction of the muscles of the hips and those on the front and back of the thighs. When the dip is performed correctly, it calls on practically every muscle on the body. The lazy man finds it difficult to hold the body rigidly straight, so he allows it to sag at the hips as in Fig. 6; and when he lowers the body he allows the hips, as well as the chest, to rest on the floor. When he straightens the arms he pushes up only the weight of his head and shoulders and thereby relieves the arm and chest muscles of part of the work. Positively, it would take thirty dips in the incorrect position to give the body as much exercise as it would get from twelve dips in the correct position.

Another important feature in this exercise (as well as in others) is correct breathing. If you have a habit of doing the dip four or five times before you take a new breath, then try exhaling as you push up and inhaling as you dip and notice if it does not take you longer to become fatigued.

All such little details as mentioned through this and other articles are of more importance than they appear to be. And when they are practiced until they become second nature they are not bothersome nor seem numerous. They all result from simply putting your mind on your exercises.

Arthur Saxon

(*Continued from page* 85)

their famous bridge act, where Arthur and Kurt lay flat on their backs and supported on their upraised feet an extremely heavy bridge and allowed an automobile to then run over the bridge. This feat is much more difficult and

dangerous than the single-man bridge where the athlete is in the "crab" position.

The concluding number was Arthur's famous stunt of supporting twelve men on a huge bar-bell. They brought forth a plank that was at least ten feet long, ten inches wide, and three inches thick. Herman and Kurt placed it on one edge, and Arthur stepped forward, grasped the exact center of the upper edge and with one mighty effort threw it to arm's length above his head. It was a perfect one-arm snatch, and the plank must have weighed considerably over a hundred pounds. It is a safe bet that not one man in ten thousand could raise that plank an inch from the ground if he had to grab it by the edge with only his right hand, but Arthur snatched it without apparent exertion. Of the thousands of spectators in the tent, I was the only one that applauded. Arthur then lay down on his back and raised his legs in the air. (He did not hold them straight, but had them bent at the knees.) The plank was laid on the soles of his feet and a row of twelve roustabouts stood with their backs to the plank. Herman and Kurt stood facing the center of the line, picked up the two center men and seated them carefully on the plank. Then they took a step to the side, seized the next outer pair, put them on the plank, and so on until they reached the end men. Then they scampered around and rolled the big three-hundred-pound bar-bell close to Arthur's head. Arthur reached back, grasped the handle of the bar-bell, pulled it over to his chest, and then as he straightened his arms and pushed the bell up, he simultaneously straightened his legs and pushed up the plank and the twelve men. To make the stunt a little more difficult Herman added his weight by sitting on the handle of the bar-bell. This concluded the act, and after Arthur had relieved most of the weight, Herman and Kurt trotted out the performers' entrance by the nearest way, but Arthur marched to the race-

track, opposite the entrance, and walked two-thirds way around the track so that the spectators could get a close-up view of him. The way he did this was characteristic of the man. You could tell that he did it only to please Mr. Ringling. Instead of bowing and smiling to the audience, he paid no attention to them whatever. He plodded around the ring staring straight in front of him with a bored expression on his face, and never by the slightest sign acknowledged the applause of the spectators. Arthur was always willing to lift whether there were five persons or five thousand people in the audience, but I have the idea that he always hated to be looked on as a human freak.

How to Kick a Football

(*Continued from page 27*)

tirely differently from the twisting kick. The laces are on the inside and the ball is almost flat on the air when hit. The instep meets it on the bulge, nearer the end of the ball than in the spiral. The foot comes around in a circle more parallel to the ground. This results in a low drive, with the ends of the traveling ball rotating almost parallel to the ground. The drive of the leg is more behind the ball than up under the ball as in the twister kick.

As I have said before, this form of punt is seldom used nowadays, and I thoroughly believe that the youngster who masters it in addition to the high spiral will have the advantage over any punters whom I have seen in recent years.

Remember that the less curve you put on the flight of a spiral kick the further it will travel. The most ideal high spiral is when the ball starts with a slight outcurve for the first part of its flight, and then loses that curve, going straight until it starts to drop. This gives more distance, and a troublesome wobble at the finish. Remember also that the low sailing punt will almost invariably bound straight away after it hits the ground.

This is a great advantage in getting a long roll out of the reach of the one man back of defence, or sending it over the side lines near goal.

In the drop-kick the stance and the stepping is exactly the same as in the punt, except that the second step is shorter. The ball should be passed by the center about waist high to the kicker. He catches it as in the punt, adjusts it so that the laces are away from him, and lets it fall to the ground in an upright or leaning slightly backward position. The instep is not outstretched rigidly as in the punt, for the ball does not touch anything but the toe. It should be dropped always in front of the kicking foot, and the kicker should never lift his head or take his eyes off the spot until the ball is well on its flight. The timing of the blow is so important that the least lifting of the head may result disastrously. The ball must be met just as it arises from the ground. By stooping slightly over and holding the ball fairly close to the ground before it is dropped accurate timing is helped. The hands on either side of the ball are held perfectly level, so that when they are opened together the ball will drop perfectly straight. In practicing the drop-kick there should be some one to hurry the kicker, so that he will get used to concentrating under fire. Perfect short drop-kicks before you attempt the long ones.

The placement-kick is exactly like the drop-kick except that the ball is held by another man. The point which I have found extremely useful in making a placement-kick is to require the man who holds the ball to first build up a little tee

out of dirt or sod on which to place the ball. This gives confidence and certainty to the kicker.

Remember in all goal kicking the first thing to do is to get the ball up in the air; otherwise it will not get over the rush line or goal, either one.

The long place-kick for goal has won important games. For accuracy and distance combined I have found it is most effective to have the ball set upright on a tee. This makes it possible for the toe to hit it a little higher up on the bulge toward the center of the ball than is necessary in the drop or placement-kick, where it has to be gotten into the air sooner.

Before I close I would like to say a few words about punting for distance. A schoolboy will read in the sporting pages about college stars who are credited with making 65-yard and 75-yard punts, and thereafter that boy's one ambition is to make kicks of tremendous length. I cannot too strongly emphasize my belief that the accurate punter who can always be depended on is a far greater asset to his team than the boy who is always trying to get tremendous distance and nothing else. These extremely long kicks are often just happy accidents. If you can learn to place your punts and send them about 40 yards every time you try, and occasionally get in a 45-yard punt, your coach will prefer you to another boy who gets off a 50-yard punt once in a game and kicks erratically the rest of the afternoon. When you go to college, if you can kick 45 or 50 yards on the average, with an occasional 55-yard effort, you will show just as much distance as the average high-class college kicker.

BOXING

(Continued from page 71)

and counter hard with your right over his heart or drop him with a right hand cross counter.

The Outer Parry

In the most commonly used head parry the right arm is always used in defending yourself against a left hand blow, and, counter-like, your left arm is always used in protecting yourself against punches from an opponent's right.

This is a good rule to follow in general, nevertheless, as variety in defense is as necessary as variety in attack, all forms of guards and blocks must be studied and practiced.

One can parry either from the inside or from the outside with either arm, in a diagonally forward and upward direction, in order to protect the head, or in a diagonally forward and downward direction in order to protect the body. You can also parry so as to secure or maintain the inner position as in the most commonly used regulation head parry, or you can parry in such a manner as to secure the outer position by means of the so-called "outer parry."

Inner parries are often so called because they give the defender the inner position in contra-distinction to "outer parries," which give the defender the so-called outer position.

Inner parries knock off, beat aside or deflect the attacking arm by striking smartly against the inner side of opponent's hitting arm at wrist or forearm with the open hand of the defending arm.

Outer parries strike the outside of your opponent's hitting arm with the inside or palm of your open glove, wrist or forearm. They give the defender the outside position.

You will note that an inner parry with

your right arm against a straight left at face deflects opponent's hitting arm so as to let it pass by on your own right side.

Whereas an "outer" parry with your right arm against a straight left at face deflects attacker's left arm so as to let it pass by on your own left side.

An inner parry with your left arm against a straight right lead deflects attacker's right arm so as to let it pass by on your own left side.

An outer parry with your left arm against a straight right lead deflects attacker's right arm so as to let it pass by on your own right side.

As a general rule, it is much better to parry a blow from the inside than from the outside, because in parrying from the inside you are more sure of securing or maintaining the inner position—a vital factor in infighting. Nevertheless, the outer parry is one of the most useful of all forms of parries.

In using outer parries the attacking blow is always thrown across the attacker's body by striking the outside of the hitting arm with the inner side of the defending hand. Sometimes it is cuffed aside with your wrist or your forearm.

To use an outside parry or parry left with your right hand as a defense against opponent's straight left lead off at your head, parry his blow towards your left side by striking or cuffing aside the wrist or forearm of the attacking arm with the palm of your open right hand glove.

(*Continued next month*)

Strengthen and Beautify Your Hair

Why Become Bald or Gray?

NEARLY thirty years ago my hair began to come out in bunches. I suffered the tortures of the damned. Baldness stared me in the face. Hours and hours I would lie awake at night trying to fathom a way out of my difficulties.

I even tried a hair tonic, but soon threw it out of the window.

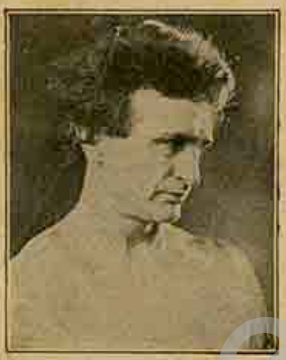
After a period devoted to intelligent consideration of the reason for loss of hair, together with sensible, dependable methods for building hair health, I found a way out.

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

I want to pass on this invaluable information to every owner of a head of hair. It is worth just as much to you as your hair is worth.

Barbers rarely know anything about remedying dandruff or falling hair. Hair culture is a sealed book to them. Doctors are as much in the dark as the barbers. So-called experts are often little better than "quacks."

Now my book is not technical. Anyone can understand the clear 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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