

DUOsymmetric

By Art Jones

body. Which should have been enough, and in many cases it was . . . but in some cases it wasn't, because some people would refuse to use even a perfect tool properly. Nautilus Machines made a near perfect form of exercise POSSIBLE . . . but they did not make it NECESSARY. It was still possible to "cheat" . . . to throw the weight; and since you can throw more weight than you can lift by the contraction of the muscles that you are actually trying to exercise, many people quickly fall into the habit of throwing the weight rather than lifting it . . . usually under the mistaken impression that they are thus showing progress.

Approximately two years ago we started extensive tests of the effectiveness of "negative only" exercise, during which style of training the weight was never lifted . . . instead, the trainee merely lowered a heavy weight that had been lifted for him, SLOWLY LOWERED the weight. The results of these tests were so obvious, and so good, that we quickly became aware of the enormous value of the negative part of exercise. We did not then know exactly "why" the negative part of exercise was more productive than the positive part, and we still don't know why . . . but there was no way to deny the fact that it is more productive for the purpose of increasing strength and muscular mass.

Now, two years later . . . I strongly suspect that one of the reasons for the superior productivity of negative exercise relates to the fact that it assures good form, literally forces the trainee to work his muscles over a full range of possible movement.

For the last several months I have been telling people to pause briefly in the contracted position of all of their exercises. . . pause and "hold the weight" motionless in that position. The idea being that this will help to assure good form, since you cannot pause in the contracted position if the weight is too heavy.

With a barbell, during most exercises . . . such a style is meaningless, because you are locked-out under the weight in the contracted position.

But with a Nautilus exercise, where there is resistance in the contracted position . . . pausing briefly and holding the contracted position will assure good form. If you cannot do so, then the weight is too heavy and you did not lift it to that position by contraction of the muscles that you are trying to work . . . instead, you threw it with the help of other muscles.

Changing to such a proper form will probably have the result of forcing you to greatly reduce the amount of weight you have been using, using incorrectly . . . but it will certainly have the additional result of greatly improving the value of your workouts. You may be forced to reduce your training poundages by as much as 50 per cent . . . and some people will find that discouraging. But ever 10 pounds used properly will do you far more good than 500 pounds used incorrectly.

Use as much weight as you can. . . as much as you can IN GOOD FORM; but



Anibal Lopez has been the hard luck bodybuilder of our time. So many times he has placed third in all the top competitions. He has one of the most symmetrical and beautifully proportioned physiques in the world. It is too bad that we are too often worshippers of bulk, but that is the way it is. This is certainly a marvelous back pose by photographer Swan.

Exercise alone is not enough. The "form" (or style of performance) of an exercise may well be the single most important factor.

While using a barbell, perfect form is literally impossible during most

exercises . . . because of inherent limitations in the tool, the barbell itself. For example; in a barbell curl, there is little or no resistance at the start of the movement . . . and absolutely no resistance at the end of the movement. Thus, regardless of the attention to form, a full-range exercise is simply impossible; the result being that a large part of the available muscular mass is not involved in the work.

The Nautilus Curling Machine solved that problem by providing resistance against a full range of possible movement . . . and other Nautilus Machines solved the same problem for all of the other major muscles of the

POLYcontractile Exercise

don't sacrifice good form for anything. Another good test of the form of an exercise is the speed of movement . . . if in doubt about a proper speed of movement, then **MOVE SLOWER**. Slower movement will also reduce the amount of weight you can handle, or will reduce the number of repetitions you can perform . . . or both; but it will help to assure that you are actually working the muscles throughout a full range of possible movement.

In a number of previous articles I have stated that the speed of movement should be . . . "as fast as possible **IN GOOD FORM**." While using as much weight as possible **IN GOOD FORM**. But I also said that the **ACTUAL SPEED** would be quite slow . . . if the weight was right and the form was good. And I also said that jerking and heaving should be avoided . . . since such sudden movements contributed nothing but danger, while greatly reducing the productivity of exercise.

Apparently many people who read those articles misunderstood this to mean that they should start racing through their workouts, heaving the weight as rapidly as possible . . . and, when they started throwing the weight instead of lifting it, they quickly found that they could use far more weight than they could previously . . . and they then made the additional mistake of assuming that this was proof of "progress."

When, in fact . . . the opposite situation was actually created; instead of improving their workouts they had removed a great part of the value, while increasing the danger of injury.

Following the Colorado Experiment (from May 1st, 1973 through May 29th, 1973) I did not train at all until January 14th, 1974 . . . a period of seven and one-half months out of training. During which time my bodyweight remained almost unchanged. But my muscular size and strength certainly changed . . . as my muscles gradually lost size from lack of use, while the resulting loss of weight was made up by an equal addition of fatty tissue. The muscle did not "turn to fat," which is impossible . . . but muscular tissue was lost while fatty tissue was gained.

Then, on Monday, January 14th, 1974, I started training again . . . my first workout consisting of one set of each of ten exercises; with all exercises being carried to a point of momentary muscular failure. I started with an amount of weight that I estimated to be correct and then performed as many repetitions as possible, **IN GOOD FORM**.

In some cases I guessed right, and in some cases I guessed wrong and started with too much weight . . . but in all cases I performed as many repetitions as possible in good form, and recorded the results.

The entire workout required exactly 21 minutes from start to finish . . . the movements themselves were performed slowly and with great concentration on form, but I moved from one exercise to the next exercise as quickly as possible without "rushing" . . .



. . . being careful not to start another exercise too soon, so soon that I would be limited by too-rapid breathing.

All of the exercises were for my upper body, with no work for the legs or lower back . . . simply because I was not in shape to perform proper exercise for my legs, not in cardiovascular shape.

For the first four weeks, the first 12 workouts since I was training three times weekly . . . I trained in a "normal" fashion, performing both the positive and negative parts of all exercises, both lifting and lowering the weight.

Then, starting with the 13th workout, I changed my schedule to one that consisted of one weekly "normal" workout and two weekly workouts with as much pure negative or negative-accentuated exercise as possible. On Monday of each week I did only normal exercises . . . but on Wednesday and Friday I used as much negative exercise as possible, and did as little positive work as possible.

Negative-only workouts were not practical, because they would have required the assistance of at least two willing helpers to lift the weight for me, and I did not always have people available to help. So, instead, I did as many negative-only exercises as I could without help . . . used negative-accentuated exercises when pure negative was impossible . . . and did normal exercises when I was forced to.

My workouts varied from as few as 10 sets to as many as 16, with the average being about 13 sets during each workout . . . I performed only one set of each exercise, and carried every set to a point of momentary failure. Failure being judged in normal and negative-accentuated exercises to be the inability to lift the weight again . . . and during negative-only exercises the inability to "control" the weight during the lowering movement.

I used 10 repetitions as a "guide Figure" in all exercises except wrist-curls, where I used 15 repetitions; and the resistance was increased as soon as I could perform the guide-figure of repetitions in good form.

Seven weeks after I started training again, on Monday, March 4th, 1974, having then completed 21 workouts . . . I again performed the exact workout that I started with, using the same exercises performed in the same order and with

Another great back of a bodybuilder who suffered defeat at the hands of the bulk boys is Charles Amato. How could you ever find a finer, better proportioned, more pleasing back than the one shown here in this snap shot photo taken by Arthur Jones without special light or assists. Study this back and you will see the perfection that is possible to only a very few people.

the same style of performance; this workout being a test of my progress.

In the meantime I had gained 11 pounds of bodyweight and had added exactly 1 and 1/4 inches to the "cold" measurement of my upper arms. Having no way to measure my starting level of fatty tissue, it was impossible to determine my actual increase in muscular tissue . . . but it was obvious from my appearance that I had "burned off" several pounds of fatty tissue and replaced it with muscular tissue . . . so my actual increase in muscular tissue was probably on the order of 20 pounds.

During that period of seven weeks I made no change in my diet. I continued to eat only twice a day . . . and ate very little. With absolutely nothing in the way of supplemental food, no "extra protein."

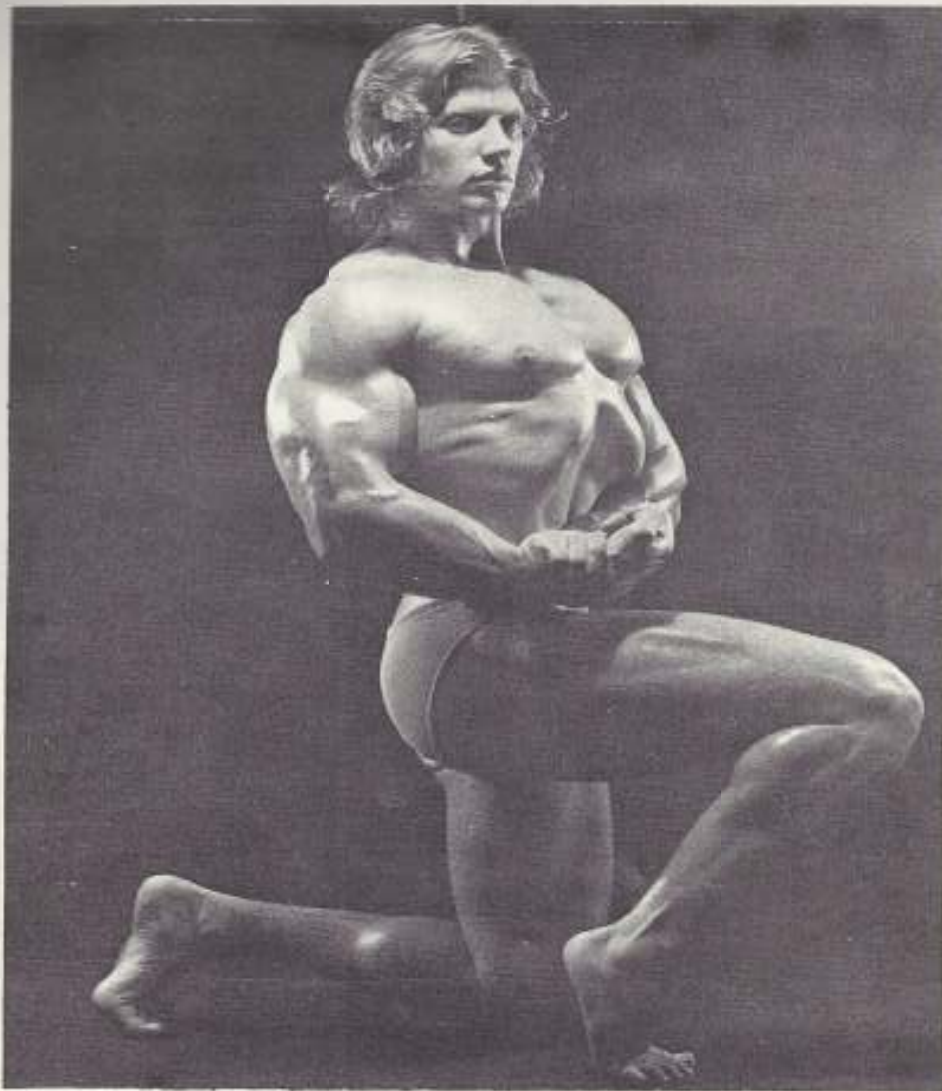
AND REMEMBER, I did absolutely no exercise for my legs or lower back.

So exactly the same diet that had maintained me at a lower bodyweight permitted me to gain 11 pounds of bodyweight, and probably 20 pounds of muscular mass, in a period of only seven weeks . . . without training my legs at all.

And the strength test provided by the 22nd workout easily confirmed the fact that my gains really were produced by an increase in muscular mass . . . because my increase in strength was very significant.

Three of the ten exercises that I used involved only my bodyweight as resistance . . . these were (1) regular-grip chins, (2) behind-neck chins, and (3) parallel dips. And in all three cases I greatly increased the number of repetitions while adding 11 pounds to the resistance in the form of increased bodyweight. In one case the repetitions increased from 7 to 10 . . . in another case from 6 to 11 . . . and in the third case from 6 to 12.

And it should be understood that all of



Clyde Bird won the Mr. Gold Coast of Australia for 1964. He claims the following measurements at 6' and 220 lbs. A 53 inch chest and a 19½ arm. Photo by Robert Naillon.

these were performed VERY SLOWLY, with a pause at both ends of every movement. Had I chosen to do them in a sloppy fashion, I could have done far more repetitions . . . but remember, good form is of ultimate importance.

Those three exercises were chosen for several reasons . . . because they are among the very best "conventional" exercises . . . and because they represent a movement that is meaningful to most people . . . but primarily because they can be performed in a negative-only fashion, by climbing up on a chair it becomes possible to perform only the negative part of the movement. Without the need for helpers.

But, of course . . . during the first workout, and during the "test workout" seven weeks later, I performed them in the usual manner, doing both the positive and negative parts of the work, both lifting and lowering my bodyweight.

Attempting to estimate the actual strength increases represented by the above stated results is impossible . . . but it should be obvious that my strength had increased "significantly."

In a fourth exercise, performed in a Nautilus Machine, I greatly

overestimated my starting level of strength and used far too much weight . . . the result being I could do only 4 repetitions at first; and seven weeks later I did 8 repetitions with the same amount of weight. So again, no real estimate of the increase in strength is possible . . . although it is obvious that it was significant.

But in the other six exercises I greatly increased the amount of weight . . . and in five out of the six, I also increased the number of repetitions.

In an exercise which can best be described as a "behind-neck press" I increased the resistance by exactly 20 per cent . . . while performing the same number of repetitions each time, 9 repetitions in both cases. This movement representing the poorest showing . . . perhaps because I suffered a broken neck thirty-one years ago and still have quite a bit of trouble as a result of it, which tends to make me a bit cautious in any exercises involving my neck or shoulders.

In all of the other five exercises I greatly increased the weight AND THE REPETITIONS . . . so the actual strength increases were above those indicated by the increase in weight.

In a bench-press type of movement performed on an Omni Machine I increased the resistance by 20 percent . . . while increasing the repetitions from 8 to 11.

In a behind-neck pulldown type of movement performed on a Torso-Arm

Machine I increased the resistance by more than 42 per cent . . . from 140 pounds to 200 pounds. And in this case, the repetitions were not increased enough to count . . . since I performed 6 full repetitions in both cases; but during the first workout I barely performed 6 . . . and in the 22nd workout, I almost did 7. But "almost" doesn't count for the record.

In a triceps exercise performed on a Nautilus "Multi-exercise" Machine I increased the resistance by 33 per cent . . . while increasing the repetitions from 8 to 12.

In a curling exercise performed on a Nautilus Curling and Triceps Machine I increased the resistance by a flat 50 per cent . . . while increasing the repetitions from 7 to 8.

In the final exercise, wrist curls performed on a Nautilus Multi-exercise Machine, I increased the resistance by 30 per cent . . . while increasing the repetitions from 9 to 12.

With due consideration being given to the increases in both weight and number of repetitions, it is probably reasonable to estimate that my average, overall increase in strength was approximately 40 per cent . . . something very close to an average of 6 per cent per week, and certainly in excess of 5 per cent per week. Which rate of increase in strength is supposed to be IMPOSSIBLE . . . and perhaps it is impossible, for people who train incorrectly.

This article is being written on the night of Monday, March 11th, a week after the "test workout," and shortly after my 25th workout . . . and it is obvious that I have continued to gain rapidly during my eighth week of training, although no exact comparison is possible because of the fact I did not perform the same workout today.

It is now my intention to train for at least seven more weeks . . . at which point I will return to Colorado State University, on May 1st, 1974, for the purpose of being weighed, measured, strength tested, and fat counted, so that these figures can be compared to the figures that were produced by exactly similar tests conducted a year earlier at the start of the Colorado Experiment. But while a year will have passed between the two tests, it should be noted that I will have trained only a bit more than four months during that year.

During the next seven weeks I will reduce the amount of training devoted to my upper body and will start training my legs . . . today, I performed 12 sets for my upper body and 1 set for my legs, a total of 13 sets.

I will continue to perform three weekly workouts . . . one "maximum" workout on Mondays, using normal exercises involving both the positive and negative parts of the movements . . . a "medium" workout on Wednesdays, using as many pure negative and negative-accentuated exercises as possible . . . and another "maximum" workout on Fridays, again concentrating on the negative parts of the exercises as much as possible.

During that period I will probably average a total of about 14 sets during each workout, 12 sets for my upper body, 1 set for my legs, and 1 set for my hips and lower back. And, if I feel like being crippled and almost unable to walk for a week, I may even add a set for my calves.

I should easily add at least another 10 pounds to my bodyweight, and would

like to add about 16 pounds . . . while continuing to reduce my level of fatty tissue. My diet will remain the same as long as I am still showing any sign of fatty tissue on any part of my body . . . two rather small meals daily, a first meal at about noon and a second meal at about 8 o'clock in the evening.

During the two "maximum" workouts, the positive-negative workouts on Mondays and the negative-accentuated workouts on Fridays, I will push as hard as possible . . . performing as many repetitions as possible in good form. During the "medium" workouts on Wednesdays (also negative-accentuated) I will use the same amount of weight but will stop one or two repetitions short of a point of momentary muscular failure.

This "holding back" during one of my three weekly workouts represents an experiment on my part . . . and it will be the first time that I have ever done so in my life; in all of the workouts that I have ever performed in my life, over a period of more than thirty-five years, I have never previously "held back" . . . I have always pushed as hard as possible, performing as many repetitions as momentarily possible, stopping only at a point where another repetition was simply impossible in good form, and sometimes even "cheating" an extra two or three repetitions.

But, at my present age, I am now beginning to suspect that I can no longer stand three really maximum workouts per week . . . so I am going to try the experiment of reducing the intensity during one of the three weekly workouts. We will see what happens, what this does to my progress.

And if my progress is not as good as I expect . . . then I will reduce the "amount" of training; at first by dropping a couple of the exercises . . . and then, if necessary, by reducing my program to only two weekly workouts.

If circumstances permit, and if my interest remains, I will probably continue to train even after the test on May 1st . . . it might be interesting to see just how strong I can get at my age, and how big in muscular condition. And it won't take long in any case . . . six or eight months of steady, PROPER training will take me about as far as I can ever go. Contrary to a lot of people's firm beliefs, it doesn't take years of training to produce maximum-possible results for a mature subject.

A certain degree of "education" is perfectly normal for a person who grows up with absolutely nothing in the way of a formal education . . . such an individual, for example, will learn to speak and understand the language of his society, but probably will not learn to read and write. The potential for a far higher degree of learning may exist . . . but without proper training (education), only a small percentage of the true potential will ever be realized.

Exactly the same situation exists in a purely physical sense . . . a certain level of physical size and strength will be reached with absolutely nothing in the way of training (exercise), but the true potential of muscular size and strength will be largely wasted because of a lack of the needed stimulation.

Education must be progressive . . . when simple skills have been mastered, then more difficult tasks must be undertaken. Repetition of mental work that has already been learned will help retain knowledge . . . but will do nothing to increase knowledge.

And Exercise must also be



progressive . . . as strength is developed, heavier loads must be imposed on the muscles. Continued work with an amount of resistance that can already be handled with existing strength will help to maintain your muscular size and strength . . . but will do little or nothing to increase your strength.

In both education and exercise you must constantly use the "overload principle" . . . the mind, or the muscles, must be faced with work that is beyond its existing level of ability. And if this is done properly, then steady increases in ability will be produced . . . greater knowledge, or greater strength; and the level of knowledge or strength that will eventually be reached will be far beyond anything that would have been produced "naturally," that would have resulted without proper training.

Since it is obviously impossible to lift a weight that you cannot lift, it is thus impossible to overload the muscles by lifting a weight that is beyond the limits of your momentary strength . . . so progress is produced in another way. A "possible" amount of weight is selected . . . an amount of weight that will permit perhaps eight repetitions in good form, and then you should perform as many repetitions as momentarily possible . . . stopping only at a point of momentary muscular failure, when another repetition in good form is impossible.

Thus, in effect, you are asking the muscles to lift an impossible heavy weight . . . even though, in fact, it is only MOMENTARILY impossible, and then only because the muscles have been exhausted by the immediately

Charles Loesch became discouraged for a time in physique competition but is back training hard and ready for the top contests. He claims a 21 inch arm and says he is aiming for a 22 inch measurement. He has some unusual workout ideas and routines which he has promised to share with readers of Iron Man soon.

preceding repetitions.

Such exercise will stimulate muscular growth . . . both muscular mass and strength will be increased as a direct result; and proof of this growth will be produced in the form of the ability to increase the number of repetitions. Instead of failing after eight repetitions, you will find that you can do nine repetitions, then ten repetitions . . . whereupon, you should increase the amount of weight by approximately 5 per cent . . . and then, with 5 per cent more weight, you will find that you are again capable of only about eight repetitions.

Having started, for example, with eight repetitions while lifting 100 pounds . . . you find that you can later perform eight repetitions with 105 pounds; which is clear proof that your strength has increased by 5 per cent.

And when you can perform ten repetitions with 105 pounds, then increase the weight to 110 pounds . . . and so on. Eventually, and a lot sooner than you might expect, you will find yourself performing eight repetitions with at least 150 pounds . . . probably with 200 pounds . . . and perhaps with 300 pounds.

(Continued on page 70)



rest of the body, including triceps (to be covered in another issue). He does not do the usual set system; instead compound sets are made use of. Elias works the biceps from every angle and employs two direct biceps exercises, one after the other, without any rest whatsoever. After two direct bicep movements, he then only takes a brief rest before starting again. A severe way to exercise the bicep, I can assure you.

Elias goes on to do many more bicep compound sets, doing different exercises after he has completed the usual six sets. In most cases 8 reps are employed, yet he quite often increases them to 20.

Elias uses heavy weights and concentrates deeply. He does not let anything disturb him whilst training and seldom misses a workout. Normally he trains five times a week, but before a major contest he then works out six days a week. One week he trains the biceps twice and another week three times, depending on the order of his programme that particular week.

CENTRATION CURL: 65 lbs. Dumbbell - each 6 sets, 8 reps.

3. **PREACHER CURL** with floor pulley, 270 lbs. alternated with **DUMBBELL INCLINE CURL**, 45 lb. dumbbell, each 6 sets, 8 reps.

4. **PREACHER CURL** with dumbbells, 75 lbs. varying grip. 6 sets, 8 reps.

5. **LYING FORWARD ON BENCH SWINGBAR CURL:** 100 lbs., 9 sets, 10 reps. (vary grip — narrow, wide, medium) with hardly any rest creating pump.

You will note that not all the exercises are done using the compound method. The poundages used by Elias are particularly heavy especially when compound sets are done.

There is no real easy way to developing big muscular biceps — just regular systematic training.