

# A Second Look At The Final Breakthrough

by Arthur Jones

**I**N an earlier article titled "The Final Breakthrough," I gave a brief outline of the required characteristics of an exercise machine designed to replace the squat; a machine that would provide all of the benefits of the squat — while markedly improving the possible degree of results producible — and with none of the disadvantages of the squat, the discomfort and possible danger.

And while it should be obvious to any literate person momentarily familiar with the weight-training scene that some of my past comments have created a storm of controversy, I think the reactions of large numbers of people to the article on a "squat machine" provided an interesting commentary on human character traits; because, without single exception up to this point, the reactions have been highly favorable — thus, apparently, while a few people may be somewhat hesitant about admitting the full value of some of our other types of machines, it seems that everybody (all those I have heard from, at least) afforded the new squat machine instant and full acceptance.

Why? Why doubt in some areas but immediate acceptance in this case?

Could it be that people want to believe in the squat machine — simply because they hate doing squats so much, while being clearly aware of the value of the squat as an exercise?

If that proves to be the case — and I think it will — then this is yet another example of wishful thinking on the part of large numbers of people, the kind of thinking that has done so much damage in the weight-training field in the past; I do not want our ideas — nor products — accepted simply because people "believe in them." From the moment of the first public announcement of our work, one of my goals has been the establishment of a trend towards logical thinking in a field where it has been all too rare in the past — and if people believe something only because they almost desperately "want it to be true" then my efforts are not producing the desired results.

And it now appears that this is happening; apparently people hate doing squats almost with outright

passion — and such an emotional attitude thus leads them into an acceptance of the new machine that is based on emotion rather than logic. It is my firm opinion that emotion and logic are mutually-exclusive; that they exist in inverse ratio — total emotionality equates insanity, and pure logic presupposes complete elimination of emotion. And while I am certainly not suggesting even an attempt to remove emotion, I do think that everybody would be well advised to try to at least be aware of the distinctions between emotion and logic.

My eldest daughter once accused me of being extremely "cold blooded" — of almost being without emotion; she asked me, "do you actually consider simple survival the ultimate achievement?"

And I told her, ". . . no, but it is certainly a prerequisite for anything else."

In that light, then, let us logically attempt to examine the concepts of the new squat machine; if it is logical — and thus "right" — let us accept it, and if not, then we should reject it.

To begin with, as I clearly stated in the earlier article on this subject, the new machine does not provide an "easier" form of exercise; which should not be surprising, since it was not our intention to provide easier exercises — on the contrary, since it is my firm opinion that exercise produces results almost in direct ratio to the intensity of effort of the exercise, we were trying to provide the hardest-possible form of exercise.

In the squat, you are primarily working three separate muscular masses — the frontal muscles of the thighs, the muscles of the buttocks, and the muscles of the lower back; and while squatting is certainly not an "easy" form of exercise, it is nevertheless true that squats involve only a small percentage of the total number of fibers contained in the muscles being worked, and that none of the muscles are worked in a direct manner — in either sense of the word "direct" as I have used it in previous articles.

That is to say; the resistance provided in squats is not "directly opposed to the possible-direction of force application" — the resistance is being provided in one direction, straight down, and the force is primarily being ex-

erted in another direction, in a direction almost 90 degrees out of phase with a direction opposite to the direction of resistance application. As a conse-

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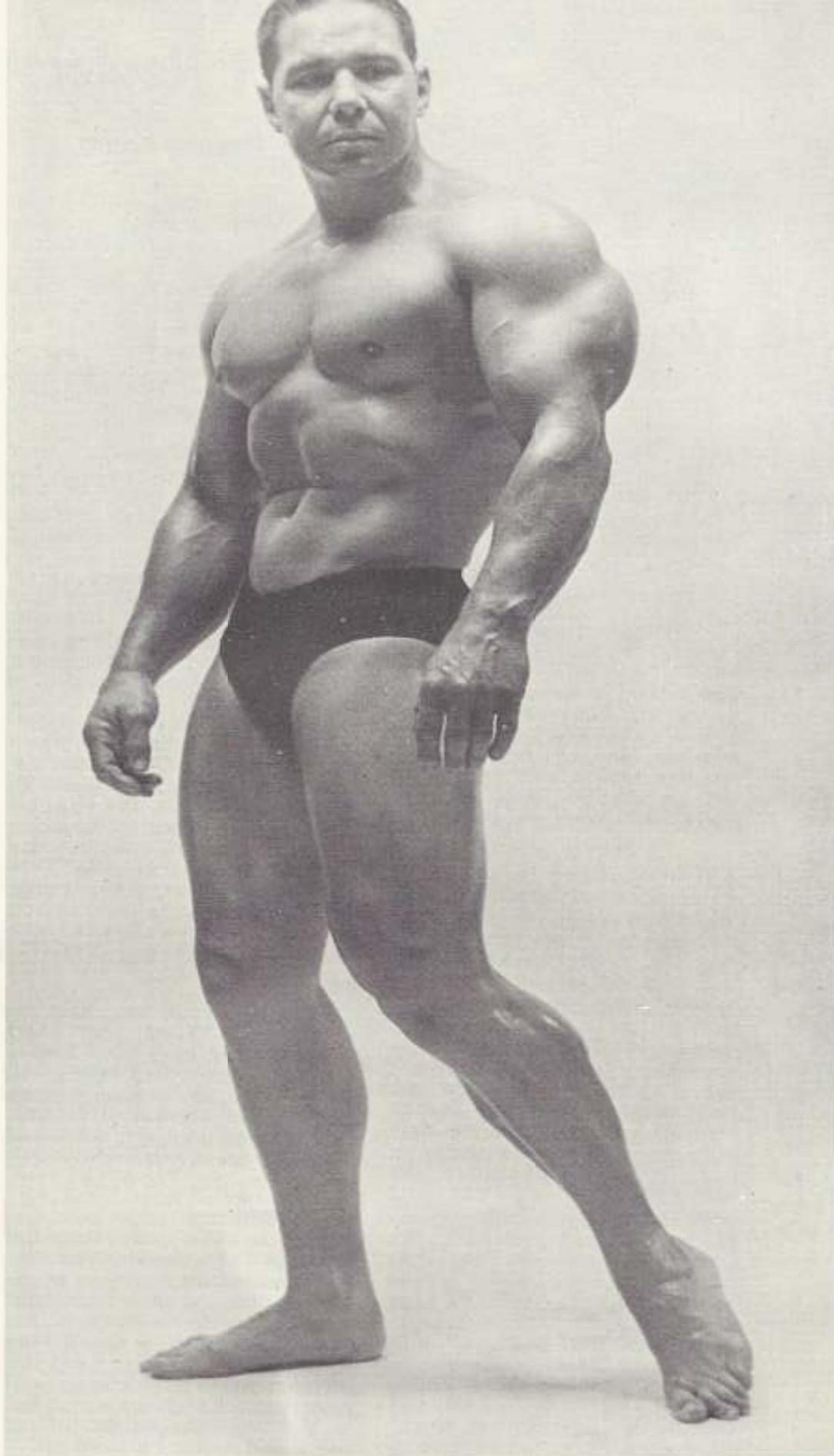
**EDITOR'S NOTE:** Most readers have been very enthusiastic about the new system and machines developed by Mr. Jones. A few ask why we continue to give the machines publicity since the articles seem to act as advertising. We admit that the articles do promote the machines and it is not our usual policy to use articles which do this, but in this instance, we feel these machines are such an advance over any other similar equipment, that such articles are justified. We plan to continue to use some articles submitted by Mr. Jones, for in addition to plugging his equipment, you will note that he has advanced some training principles not heretofore recognized or used, that can be of tremendous value for those using barbells. May we direct your attention to past articles in which he has clarified the function and work of muscles as it has not been done before. Did you understand the full function of a muscle fiber before reading his explanation in last issue? Also let us direct your attention to his description of how you can work the legs with barbells, as they have never been worked before, in his article beginning on page 33. Mr. Jones has many excellent ideas on training that can improve your barbell training when so applied. We have asked him to put these ideas on paper so we can publish them in booklet form so that those of you who do not have a machine available can utilize some of these principles with your barbell training. We can only guess as to how soon these can be ready as Mr. Jones's time is limited. We will have an announcement when they are ready. Many people call us and ask us what we think of the machines. I can only say I have not personally used them, and may not since I no longer have ambitions for larger muscles, but I have talked to people who have used them and own them and they seem quite satisfied. One gym operator just told me that he would not trade any other machine in his gym for the Pullover Torso machine.

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quence, a very large part of the force being produced is wasted — is doing nothing in the way of moving the resistance. And secondly, in some important areas of the exercise movement — and as it happens these are the most important areas — the direction of resistance application is fully 90 degrees out of phase with the direction of force application; and thus, obviously in such a situation there is literally NO resistance in those positions — not, at least, insofar as the muscles you are trying to work are concerned — and without resistance there is no possibility of benefit from the exercise in those positions, in the very positions where greatest benefit is both possible and desirable, in the only position where it is even possible to involve ALL of the muscles in the exercise.

And while the above paragraph should take care of one meaning of the word "direct," it still remains necessary to explain the same word in another sense — a sense that is of equal importance in this instance. To be direct in this sense, exercise must be applied directly to the muscles being worked — rather than indirectly; the exercise must not involve, be dependent upon, nor be limited by, other, weaker muscles — not, at least, if you are trying to build the greatest possible degree of strength and/or size. Because a chain is only as strong as its weakest link — and you will fail in any exercise at the point where the weakest involved muscular structure runs out of steam; and when such a muscle is much smaller and weaker than another muscle being used in the same exercise, then the larger and stronger muscle will not be — literally cannot be — worked anywhere near the point that is required for inducing maximum possible muscle growth stimulation.

In the case of the squat, this usually happens when the lower back muscles reach a point of exhaustion — or cannot handle the load involved in a heavy single attempt; although, in single-attempt squats carried to the proper low point, the lower back is usually not the limiting factor — since, in that position, the thighs are in the most disadvantageous position possible in this exercise, for three reasons. First, the moment-arm of the resistance is at or near its maximum point, and thus effective resistance is at its highest level (or very near it) — second, the moment arm "within" (Continued on page 69)



**Bill Pearl, one of the greatest of all time, now a very successful business man and gym operator, has decided to try for the Mr. Universe again against you fellows half his age, and is now starting heavy training toward this end. Bill is 40, and in superb condition already. He has many of the Nautilus machines in his gym. Photo by Stern.**