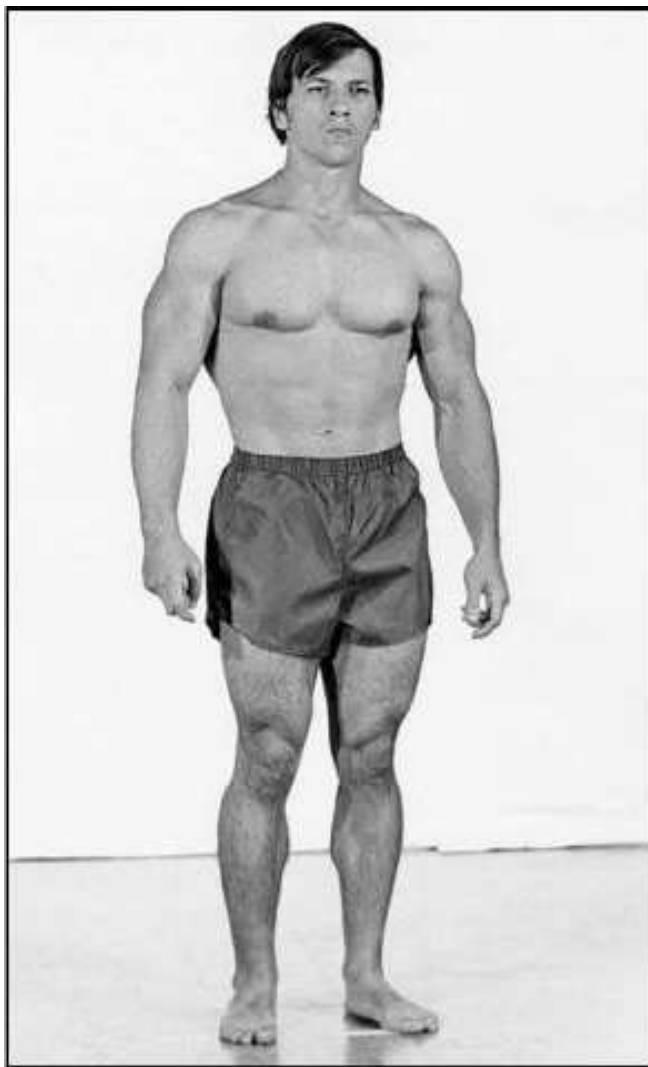


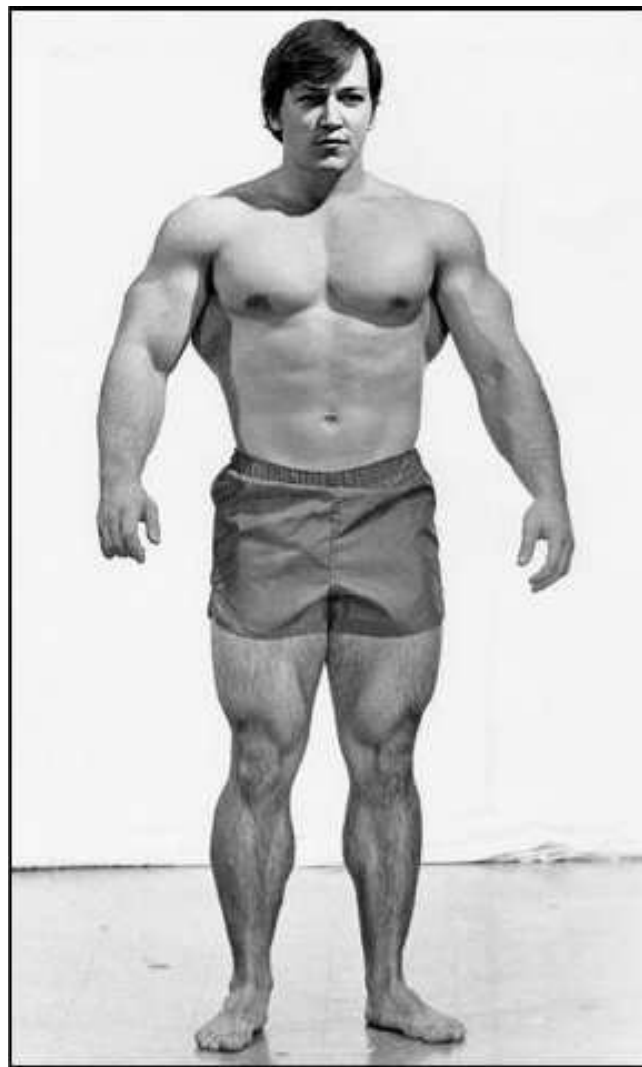
37 Years After
The
Colorado Experiment:
Facts and Fictions

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May 1, 1973



May 29, 1973



Casey Viator, from 14 brief workouts spread over 4 weeks, increased his muscle mass by 63.21 pounds. In the process, he added 2-1/8" on each arm, 5-7/8" on his chest, and 3" on each thigh.

Recently, out of curiosity, I put “Colorado Experiment, Casey Viator” into Google’s search engine. It has been 37 years since Arthur Jones of Nautilus had first reported the results of this study and, amazingly, I received 2,380 links.

I probably should not be that surprised by all the Internet discussions, since Viator gained such a phenomenal amount of muscle in only 28 days.

After reading carefully each link on pages 1-10, I could tell there was a huge amount of misinformation being circulated about this intriguing experiment. It’s time to reopen the books, reexamine the data, and set the record straight – at least, from my viewpoint.

My Connection

The Colorado Experiment took place in May of 1973 at Colorado State University. The following month I was at the AAU Mr. America contest in Williamsport, Pennsylvania, when Jones and Viator released preliminary information about the results.

In July of 1973, Jones recruited me to become Director of Research for Nautilus Sports/Medical Industries, and I worked in that capacity for 20 years. One of my first duties at Nautilus was to become very familiar with the Colorado Experiment. Jones had a folder that contained all the workout routines and Jones’s wife, Liza, had a notebook that she used to record Viator’s daily food intake. I still have copies of that material.

All the relevant data were separated and assembled. Nautilus then printed and distributed thousands of brochures on the Colorado Experiment. I published the results in several of my books, and three or four other authors did the same.

My own history with Viator goes back some four years earlier than the Colorado Experiment. I first met Casey in a bodybuilding contest in Texas in early 1969 and competed against him for the next two years. While at the Nautilus headquarters in Lake Helen, Florida, from 1973 to 1980, I trained and photographed Casey numerous times, especially in preparation for the 1978 NABBA Mr. Universe contest.

Concerning Arthur, I met him in August of 1970 at the AAU Mr. USA contest in New Orleans and visited him in Lake Helen, Florida, multiple times over

the next three years. I kept in regular contact with Arthur until he died on August 28, 2007.

Now, let's get to the actual facts and figures of the Colorado Experiment.

Facts: The Preliminaries

Dr. Elliot Plese

On June 9, 1971, I was talking on the phone to Arthur Jones. "Why don't you drive down tomorrow," Arthur asked, "and watch Casey go through his last workout before the Mr. America?" "Okay," I replied, "I'll be there at 3:00 p.m." "Show up an hour earlier," Arthur said, "and you can ride with me to the airport to pick up Elliot Plese. He's the Director of the Exercise Physiology Laboratory at Colorado State University."

The next day I hooked up with Arthur and we met Elliot Plese at the airport in Orlando. Interestingly, Elliot was a good friend of Robert Singer, who was my major professor at Florida State. They were classmates together in graduate school at Ohio State University.

Elliot, Arthur, and I had a great time talking about strength training and I could tell Arthur was very interested in doing a future project with him at Colorado State University. After watching Casey train in an unbelievable fashion that night, I was certain that Elliot wanted to join Arthur in a strength-training study.

Two years later that is exactly what happened. Dr. Elliot Plese carefully supervised the Colorado Experiment.

Setting the Stage

Fact: The last week of April 1973, 20 pieces of Nautilus equipment, including some prototypes with foot pedals for negative-only training, were delivered and moved into Dr. Plese's Exercise Physiology Laboratory at Colorado State University in Fort Collins, Colorado.

Fact: Arthur Jones and Casey Viator flew into Fort Collins and remained until the end of May.

Pretesting

Fact: On April 30, 1973, pretest measurements on Casey Viator's body composition (muscle and fat) were performed by Dr. James Johnson, Associate Professor, Department of Radiology, Colorado State University. Other tests and measurements, including photography, were completed on the following day.

Fact: Casey Viator, age 21, at a height of 5 feet 8 inches, weighed 166.87 pounds. His percentage of body fat, as measured by the "potassium whole body counter," was 13.8 percent.

The Conditions

Fact: The experiment was conducted from May 1, 1973, through May 29, 1973, for an elapsed period of 28 days.

Fact: The purpose of the experiment was to produce a high level of muscular growth by training Viator every-other day, or 14 times in 28 days, in a supervised university setting. The training was intense, progressive, and involved a negative-only repetition style on approximately 50 percent of the exercises.

Fact: No special food supplements were used. No growth drugs or steroids were engaged. A reasonably well-balanced diet was consumed, with Viator eating six meals per day.

Facts: The Results

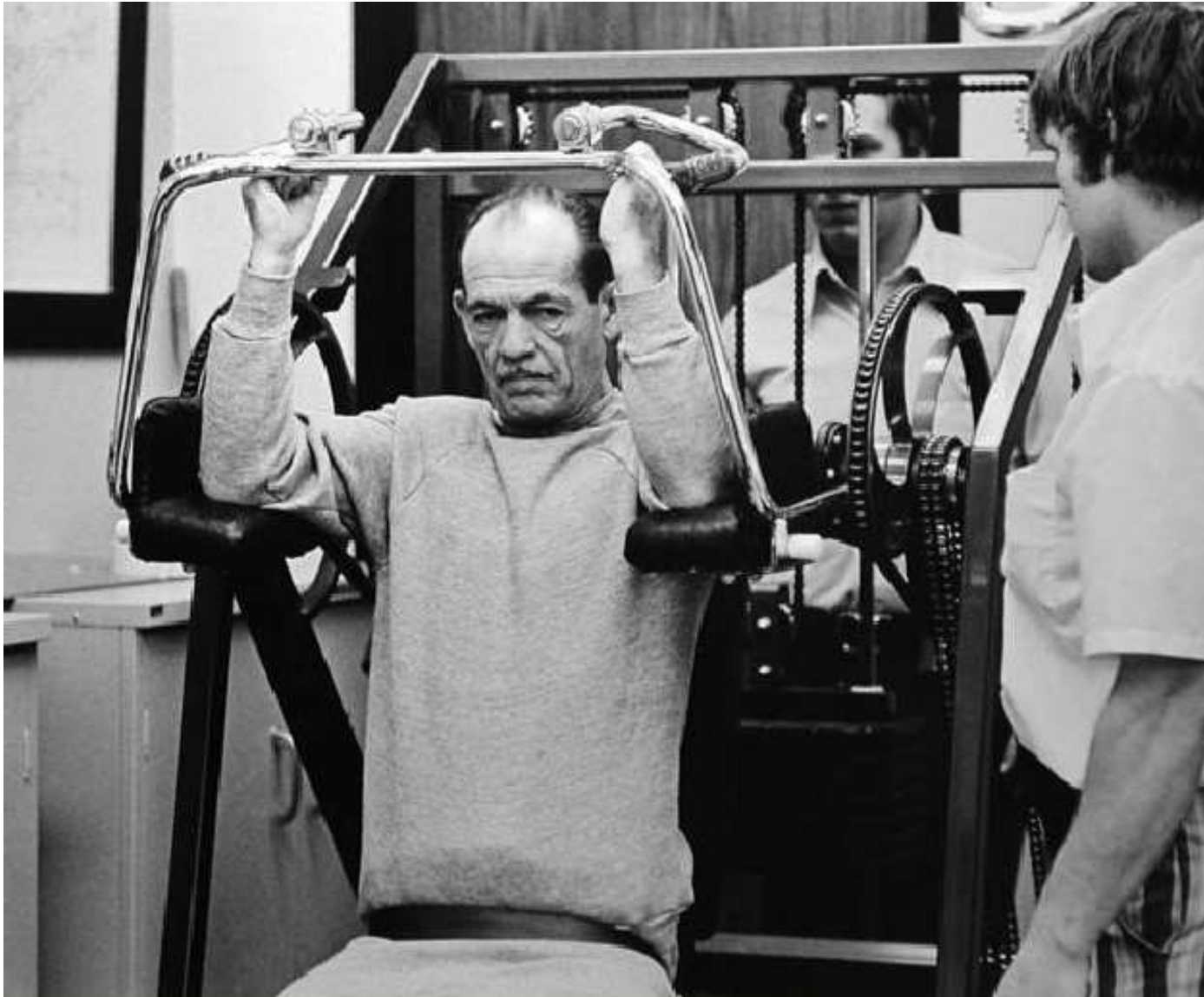
Gains and Losses

Fact: Arthur Jones pushed Viator to his limit on each exercise. Viator's routines averaged 12 exercises; from start to finish, each workout averaged 33.6 minutes.

Fact: Viator's ending body weight was 212.15 pounds with 2.47 percent body fat. That was an increase of 45.28 pounds of body weight, which included a loss of 17.93 pounds of fat.

Fact: Viator's overall muscle mass gain in 28 days was 63.21 pounds. That was an average muscle mass increase of 4.51 pounds per workout.

Fact: Viator was successful at building muscle and losing fat *simultaneously*. It was Dr. Plese's and Dr. Johnson's assessment that Viator used the nutrients from his fat cells to assist him in the muscle-building process.



Arthur Jones is shown doing a set of Negative-Only Pullovers, which required the lifting assistance of two spotters. During the Colorado Experiment, Jones trained himself 12 times in 22 days, and recorded an increase in his muscle mass of 15.44 pounds.

Long Muscles, Mr. America, and Rebuilding

To prevent any misunderstanding, Jones was careful to always note that Viator's results were anything but *average*. They were exceptional because Viator was an exceptionally gifted athlete, with long muscle bellies throughout his body.

Plus, Jones pointed out that Viator won the 1971 AAU Mr. America, weighing 218 pounds. After winning the contest, Viator took some time off from

training and returned a year later. In December of 1972, he weighed 200.5 pounds.

In early January of 1973, Viator was involved in a serious accident involving a wire-extrusion machine, and lost most of the little finger on his right hand. Then, he almost died from an allergic reaction to an anti-tetanus injection.

As a result, from January through April of 1973, Viator did no training. In fact, most of the time he was depressed and he had little appetite. His muscles atrophied, and he lost 33.63 pounds, with 18.75 of the pounds being attributed to the near-fatal injection.

Some – perhaps most – of Viator’s success from the Colorado Experiment was that he was rebuilding muscle that he had already built two years earlier.

Fictions and Critiques

All of the following speculations, accusations, or urban myths were gathered from the Internet. Some are humorous, some are about disbelief, and others are malicious. Let’s take a look at these fictions, along with my comments.

Anabolic Drugs

Fiction: The most prevalent falsehood involved anabolic drugs. For example:

From an Internet discussion forum: “To gain that much muscle, Casey must have been on steroids.”

“Casey was on the juice,” wrote Ed Connors in his book, *Gold’s Gym Mass Building*.

Mike Mentzer, in his *Heavy Duty II*, claimed Casey was on steroids during the Colorado Experiment.

Arthur Jones was clearly against anabolic drugs of any kind and made this clear in all his writings. He noted in his report on the Colorado Experiment that . . . “the use of so-called growth drugs (steroids) is neither necessary nor desirable.”

In anticipation that Casey might be accused of taking drugs during the experiment, Arthur hired the toughest guy available to be Casey’s suitemate and shadow him 24/7. Who was this guy? It was Tom Wood, the brother of

Kim Wood. Kim was a partner in the Nautilus Midwest distributorship and was the strength coach of the Cincinnati Bengals for 28 years. Tom and Kim were, and remain, strong supporters of anti-steroids in sports and fitness.

I've spoken with Tom Wood several times about his participation in the Colorado Experiment and he's certain that Casey did not take anabolic steroids during the 28-day study.

Force Feeding and Protein Intake

Fiction: During the Colorado Experiment, Jones force fed Casey Viator each day to ensure that his dietary calories and protein intake was massive.

Wrong. Arthur did not believe in force feeding nor massive protein intakes. Also, no food supplements or protein powders were used.

Arthur's wife, Liza, kept a daily food diary for Casey and everything he consumed was meticulously recorded. I examined this diary and calculated the total number of calories that he ingested each day. He never ate more than 5,000 calories on any single day and most days his calories were closer to 4,000 than 5,000.

Casey consumed the standard three meals: breakfast, lunch, and dinner – and usually had several snacks at mid-morning, mid-afternoon, and evening.

Photographs and Measurements

Fiction: Several Internet chat rooms related to bodybuilding have suggested that Casey's before-and-after photographs do not look as though he actually put on 63.21 pounds of muscle. Plus, they often cite that Arthur never reported any before-and-after circumference measurements, as evidence that the study was not completely on the level.

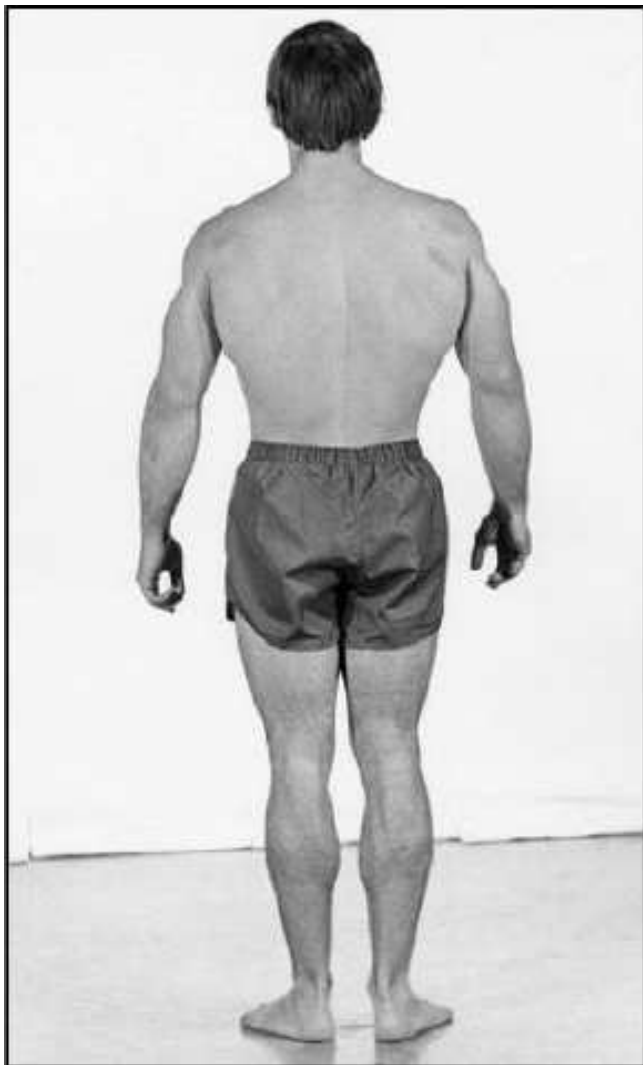
Wrong again. Arthur employed rather flat lighting, as opposed to contrast lighting, because he wanted to influence the coaching and medical professions more than the bodybuilding world. Extreme muscularity would have been a turn off in the market that Jones most wanted to influence.

I visited with Casey shortly after the completion of the Colorado Experiment and he took off his shirt and did some poses. His physique in person was significantly more muscular and ripped, compared to the flatness that was displayed in the *after* photographs.

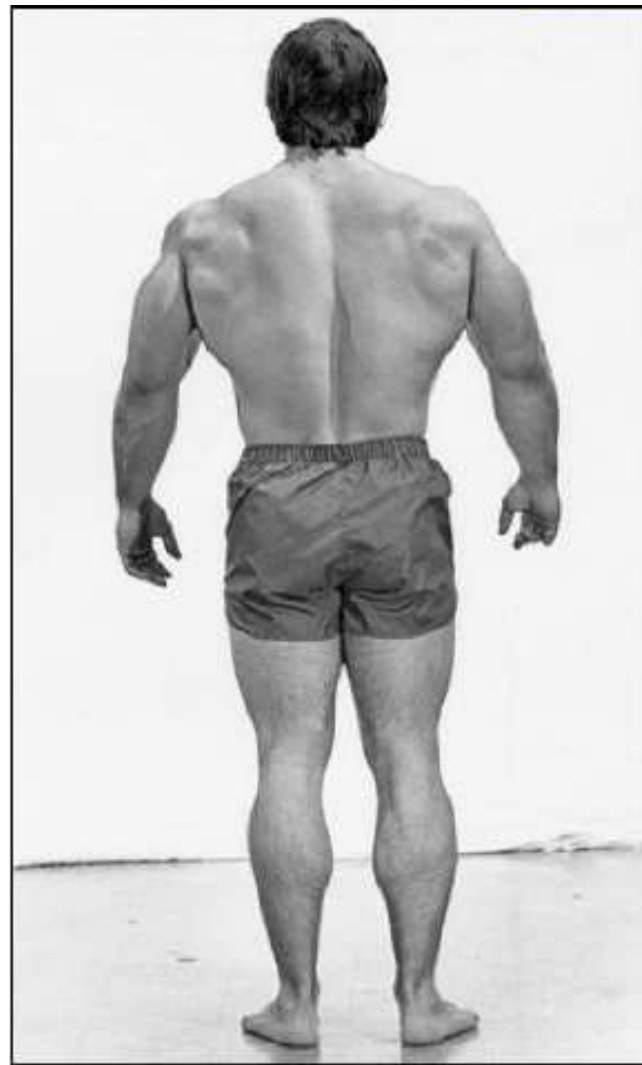
Jones was a precise administrator of circumference measurements, but he used these parameters to satisfy his own curiosity and this data were not published. However, shortly after the Colorado Experiment, I asked Jones to let me see Casey's before-and-after, body-part measurements. The third time I pestered him for the numbers, he fired off these figures from his memory: "Casey added 2-1/8 inches on each contracted arm, 5-7/8 inches on his chest, 2 inches on his waist, and 3 inches on each thigh."

Throwing those measurements into the mix, along with the flat lighting of the comparison photos, then a gain of 45.28 pounds of body weight and 63.21 pounds of muscle – are in my view, much more plausible.

May 1, 1973



May 29, 1973



Do Viator's "after" thighs look bigger and stronger (also see page 1)? They should because during one pretest involving the Universal Leg Press machine, he did 400 pounds for 32 repetitions. During the post-test, on the same machine, he did 840 pounds for 45 repetitions. Thus, his leg strength more than doubled and he added 3" on each thigh.

No Replication

Fiction: The Colorado Experiment is BS because no one else has been able to even come close to duplicating what Jones claimed happened.

Jones always said that Viator was a genetic superman, with his long muscle bellies and short tendons. And, he also pointed out that Viator was rebuilding muscle he already had previously built.

I've put a number of above-average men through similar programs as the Colorado Experiment, with the following results:

- Eddie Mueller, *Massive Muscles in 10 Weeks*, built 18-1/4 pounds of muscle in 10 weeks.
- Todd Waters, *High-Intensity Strength Training*, built 15-1/4 pounds of muscle in 6 weeks.
- Jeff Turner, *GROW*, built 18-1/4 pounds of muscle in 4 weeks.
- Keith Whitley, *Bigger Muscles in 42 Days*, built 29 pounds of muscle in 6 weeks.
- David Hammond, *Bigger Muscle in 42 Days*, built 22-1/2 pounds of muscle in 6 weeks.

Perhaps my most impressive results were from David Hudlow, as reported in my book, *The New High-Intensity Training*. David built 18-1/2 pounds of muscle in 11 days. In contrast, Casey Viator, in the first 11 days of the Colorado Experiment, built 26.6 pounds of muscle. That was a 44-percent improvement over Hudlow's results, which is certainly significant.

Bottom line: Casey Viator had what I considered to be one-in-a-million genetics for bodybuilding. That means, if you put 1 million randomly selected men through the exact same Colorado Experiment, only one man would achieve the same results as Viator.

Viator's Routines

Fiction: One Internet discussion forum listed Casey Viator's basic routine from the Colorado Experiment as follows:

1. Leg Press
2. Leg Extension
3. Squat
4. Leg Curl
5. One-Legged Calf Raise
6. Pullover
7. Behind Neck
8. Rowing
9. Behind-Neck Pulldown
10. Lateral Raise
11. Behind-Neck Press
12. Biceps Curl
13. Chinup
14. Triceps Extension
15. Parallel Dip

Wait a minute! Those were the exercises Viator performed two days before he entered and won the 1971 AAU Mr. America contest. I described his exercise-by-exercise workout in Chapter 2 of my book, *The New High-Intensity Training*. The ordered listing above was **not** a part of Jones's Colorado plan.

I still have copies of all the routines that were used in the Colorado Experiment. Note: Each exercise was performed using a Nautilus machine or a Nautilus prototype. Interestingly, Jones organized a slightly different routine for each of the 14 training days. Here are three of them:

Routine # 1

1. Negative Hip and Back
2. Negative Leg Extension
3. Negative-Accentuated Squat
4. Negative Leg Curl
5. Negative Pullover
6. Negative Torso-Arm to Neck
7. Negative Omni Shoulder
8. Negative Chin
9. Negative Triceps
10. Negative Biceps

Routine # 7

1. Negative Pullover
2. Negative Torso-Arm to Neck
3. Negative Shoulder
4. Negative Biceps
5. Negative Bench Press
6. Negative Chin
7. Negative Triceps
8. Normal Compound Biceps
9. Normal Double Shoulder
10. Normal Squat
11. Normal Hip and Back
12. Negative-Accentuated Leg Extension

Routine # 14

1. Negative-Accentuated Behind-Neck Press
2. Normal Chin
3. Normal Dip
4. Negative-Accentuated Biceps
5. Negative Bench Press
6. Normal Compound Biceps
7. Normal Omni Triceps
8. Negative-Accentuated Biceps
9. Normal Omni Triceps
10. Normal Dip
11. Normal Wrist Curl
12. Normal Squat



Viator performed an average of **12 exercises** during each routine. Pictured above was the Nautilus Omni Shoulder machine, which had a foot pedal for use in negative-only work. On the right side of the photo was a prototype of the Nautilus Omni Bench Press, which also involved a negative-only foot pedal.

Free Weights Versus Nautilus

Fiction: The Colorado Experiment was geared to training on Nautilus equipment. It would not work well with free weights.

While Jones could be critical of training with barbells and dumbbells, he also wrote extensively on how to get good results from using free weights. In addition, he often referred to a Nautilus machine as “an improved barbell.”

Pressed to make a definitive statement (which he did NOT like to provide) on the difference between the Colorado Experiment executed with Nautilus machines and the Colorado Experiment performed with similar free-weight

exercises – Jones predicted that Viator would have achieved 75 percent of the muscle gains with free weights that he received with Nautilus machines.

Why would free weights be less productive than Nautilus training?

Several reasons, but the primary one: Jones knew that with free weights a trainee would NOT be able to apply negative repetitions with the same degree of effectiveness that he could with Nautilus machines. And Jones always thought that heavy negative repetitions were a key factor in stimulating Viator's muscular gains.

Even with the free-weight limitations, 75 percent of 63.21 equal 47.41. In Arthur's opinion, if Casey had trained with free weights instead of Nautilus, he would have still gained an impressive 47.41 pounds of muscle mass.

Looking to the Future

I've tried to be as straightforward as possible with all my facts, fictions, and comments concerning the Colorado Experiment. Am I biased because of my experiences with Arthur Jones and Casey Viator? Possibly, to some degree, because I really liked both of them. On the other hand, I try to keep objectivity in the forefront of my thinking.

Looking back to the 1973 Colorado Experiment, Arthur Jones's major goal was to demonstrate to the coaching and medical professions that rapid and large-scale increases in muscle mass are produced by the proper application of Nautilus exercise. Jones's marketing of Viator's overall results certainly achieved the awareness he desired for many years.

He did not, however, anticipate the fervent interest the study generated from bodybuilders, or the ongoing speculation that it has received for more than 30 years.

In conclusion, may the reexamined and more complete facts of the Colorado Experiment continue to *fascinate* and *provoke* the attention of bodybuilders everywhere.

Dr. Ellington Darden was Director of Research for Nautilus Sports/Medical Industries for 20 years. He is the author of 71 fitness books. Dr. Darden makes his home in Orlando, Florida, where he manages two interactive web sites, www.drdardenfitness.com and www.drdarden.com, and continues to do research, writing, and Intensive Coaching from his private gym.