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Behind the Record Breaking

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Placing a limit on man's ultimate achievements in athletics, especially track and field, has been fashionable over the last 30 years. Over the same span one set of standards after another has been exploded to expose statistics and theories as fallacies.

On August 5, 1934, at Oslo, Norway, Jack Torrance, a 310-pound behemoth from Louisiana State, lifted the 16-pound shot 57'1", a blast which was scarcely less stunning than the cannonade at Fort Sumter.

That was still the global standard when World War II ended. Nobody even was approaching it. Coaches and athletes began thinking nobody could do it unless they were as big as the old leviathan of the Bayous. You couldn't be any bigger and confine your action to the seven-foot circle.

On the morning of April 20, 1948, before a handful of spectators lounging about to watch the preliminaries of the Kansas Relays, Charles Fonville, a 190-pound Negro from Michigan, fired 58'¼", fracturing Torrance's ancient mark by almost a foot.

Fonville's historic parabola on the Kansas plains would not have earned him a trip to Rome two summers ago. Stanford's Jerry Winters was no better than fifth in the Final Olympic Trials with a 59'11¼" effort. Four others were over 61 feet.

This is but one sample of the unrelenting assault on track and field barriers. The unattainable heights have been swept into limbo. So has the next impossible barrier and the next.

The champions are the greatest in history. And the mass of heirs-apparent is crowding up behind them, thicker and better than ever rushing to scale new pinnacles and crowd the monarchs off their thrones.

What has brought about this maelstrom? How can it be maintained and where will it stop?

Nobody is attempting to answer the latter question anymore. A panel of 15 collegiate track coaches, representing each section of the country, were queried on the first two. Specifically they were asked about weight training, design and manufacture of equipment, modern athletic physique, specialization in one sport, and improvements in technique.

There is general, though not unanimous, agreement on the fact that each one of these categories has helped to bring about, and maintain, the fantastic track and field pace of today.

However, three members of this cinder judiciary, cite additional factors, or overlapping factors, which they deem more, or at least as important as those upon which they were queried.

Stanford's Payton Jordan puts it concisely with this thought ... "Because of emphasis and dedicated training, plus refinements in coaching and equipment we have shown most of our improvement."

"If I had to list in order the reasons for our great improvement," says Michigan's Don Canham, "I'd have to do it this way: 1. Greater interest -- Thousands of new athletes and coaches of track. The cream comes to the top. 2. More coaches -- Thus better ones. 3. Improved techniques -- The latest practices now are spread from country to country in a short time -- a. weight training; b. interval training; c. new event techniques. 4. Greater capacity for work -- Everyone realizes the body can do much more work than ever was dreamed of in the 1930's. 5. Refinement of the human race -- Taller, stronger, etc."

Colgate's Jack Warner adds this thought, "I am also certain that psychology has played a major role in this mass improvement. Evidence Bannister's breaking the four-minute mile. He showed it was humanly possible and the mass flow began.

"An increase in a more scientific approach has helped and may be our best means to further improvement in the future. More

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Morale Equals 400 Hurdle Mark

BELGRADE, YUGOSLAVIA, Sept. 16 -- Italy's Salvatore Morale took the individual spotlight at the seventh European Championships with his world record equaling 49.2 for the 400 hurdles as the team honors went to Russia with seven gold medals.

Morale, 23, tied the mark set by American Glenn Davis in 1958 after posting a 50.0 in his semi-final. The top-ranked intermediate hurdler in the world last year, Morale won easily as runner-up Jorg Neumann of Germany posted a 50.3, two-tenths ahead of countryman Helmut Janz. Neumann, only 21, went into the meet with a best of 50.9 but improved to 50.6 in his semi-final and 50.3 in the final. He ran 53.0 last year.

Russia picked up its firsts in the 10,000, high hurdles, broad jump, high jump, discus throw, javelin and decathlon. The top man for the Russians was world 10,000 record holder Pyotr Bolotnikov, who took the 10,000 in 28:54.0 after a 58.6 last lap. He then tried to double back in the 5,000 but was forced to run 13:53.4 in his qualifying heat and placed only third in the final as Bruce Tulloh won with a 1:59.8 final 800 and a 57.6 last 400.

Most of the Russians won easily. Anatoliy Mikhailov clocked 13.8 in the highs, Igor Ter-Ovanesyan broad jumped 26'10½", Valeriy Brumel high jumped 7'3", Vladimir Trusenyov threw the discus 187'4½" and Janis Lusis threw the javelin 269'2". Most of these wins were expected but Trusenyov was not expected to win so easily. His main challenger and the defending champion, Edmund Piatkowski of Poland, placed a disappointing fourth. Although Ter-Ovanesyan won by more than a foot a new broad jump star was unveiled in 19-year-old Rainer Stenius of Finland, who leaped 25'9" in second place. He jumped 24'6" last year.

A Russian who had a hard time winning was Vasily Kuznyetsov in the decathlon. He was only sixth after the first day with 4,161 points with two Germans, Willi Holdorf and Werner von Moltke, leading the field with 4,370 and 4,335 points, respectively. On the second day the battle was between von Moltke and Kuznyetsov and after eight events the German held a 336-point bulge over the Russian. However, Kuznyetsov trimmed 291 points off of this when he threw the javelin 223'4" while von Moltke managed only 184'3½". Kuznyetsov then won the title for the third straight time when he ran 4:41.0 in the 1500 meters as von Moltke clocked a 4:46.6. Von Moltke scored only 6,977 points last year but had scored 7,715 points earlier in the season.

Hungary's Gyula Zsivotzky improved on his European hammer throw record for the second time this season when he won easily at 228'5½". He had set the previous record of 228'3½" only a few days before the meet.

Besides Kuznyetsov other 1958 champions who successfully defended their titles were Ter-Ovanesyan, Jozef Schmidt in the triple jump and Germany in the 400 relay. Otherwise defending champions fared poorly. Manfred Germar was eliminated in the 200 semi-finals, Zdzislaw Krzyszkowiak, winner of the 5,000 and 10,000 in the 1958 meet, tried the steeplechase this time but was eliminated in the heats. Also eliminated in his heat was defending steeplechase champion Jerzy Chromik. Tadeusz Rut of Poland was eighth in the hammer final and another Pole, Janusz Sidlo, was seventh in the javelin final.

Two of the winners tried for world records but failed. Pentti Nikula maintained Finland's domination of the pole vault when he cleared 15'3". He then made 15'9" on his third attempt but was unsuccessful at the world record height of 16'3". Russia's Valeriy Brumel made 7'3" on his first attempt but couldn't make 7'5⅜".

100m, Piquemal (France) 10.4; 2. Delecour (France) 10.4; 3. Gamper (Germany) 10.4; 4. Hebauf (Germany) 10.4; 5. Juskowiak (Poland) 10.4; 6. Foik (Poland) 10.5.

200, Jonsson (Sweden) 20.7; 2. Foik 20.8; 3. Ottolina (Italy) 20.8; 4. Delecour 21.0; 5. David Jones (GB) 21.0; 6. Schumann (Ger) 21.2.

400, Brightwell (GB) 45.9; 2. Kinder (Ger) 46.1; 3. Reske (Ger) 46.4; 4. Metcalfe (GB) 46.4; 5. Jackson (GB) 46.4; 6. Badenski (Pol) 47.4.

800, Matuschewski (Ger) 1:50.5; 2. Bulishev (USSR) 1:51.2; 3. Schmidt

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EUROPEAN CHAMPS (continued from page 25)

(Ger) 1:51.2; 4. Salonen (Finland) 1:51.2; 5. McCleane (Ireland) 1:51.2; 6. Krivosheyev (USSR) 1:51.5.

1500, Jazy (France) 3:40.9; 2. Baran (Poland) 3:42.1; 3. Salinger (Czech) 3:42.2; 4. Bothling (Ger) 3:42.7; 5. Krause (Ger) 3:43.8; 6. Savinkov (USSR) 3:44.2.

5000, Tulloh (GB) 14:00.6; 2. Zimny (Pol) 14:01.8; 3. Bolotnikov (USSR) 14:02.6; 4. Boguszewicz (Pol) 14:03.4; 5. Bernard (France) 14:03.8; 6. Anderson (GB) 14:04.2.

10,000, Bolotnikov 28:54.0; 2. Janke (Ger) 29:01.6; 3. Fowler (GB) 29:02.0; 4. Hyman (GB) 29:02.0; 5. Bogey (France) 29:02.6; 6. Ivanov (USSR) 29:04.8.

Marathon, Kilby (GB) 2:23:18.8; 2. Van Den Driessche (Belgium) 2:24:02.1; 3. Baykov (USSR) 2:24:14.8; 4. Wood (GB) 2:25:57.8; 5. Kantorek (Czech) 2:26:54.4; 6. Popov (USSR) 2:27:46.8.

3000SC, Roelants (Belgium) 8:32.6; 2. Vamos (Rumania) 8:37.6; 3. Sokolov (USSR) 8:40.6; 4. Buhl (Ger) 8:47.0; 5. Simon (Hungary) 8:49.4; 6. Yevdokimov (USSR) 8:50.8.

110H, Mikhailov (USSR) 13.8; 2. Cornacchia (Italy) 14.0; 3. Berezutskiy (USSR) 14.2; 4. Chardel (France) 14.2; 5. Mazza (Italy) 14.3; 6. Chistyakov (USSR) 14.4.

400H, Morale (Italy) 49.2 (ties world record); 2. Neumann (Ger) 50.3; 3. Janz (Ger) 50.5; 4. Rintamaki (Finland) 50.8; 5. Kriunov (USSR) 51.3; 6. Anisimov (USSR) 54.2.

BJ, Ter-Ovanesyan (USSR) 26'10½"; 2. Stenius (Finland) 25'9"; 3. Eskola (Finland) 25'9"; 4. Bondarenko (USSR) 25'8¼"; 5. Gawron (Poland) 25'4¼"; 6. Kalocsai (Hungary) 25'2½".

TripleJ, Schmidt (Poland) 54'3½"; 2. Goryayev (USSR) 53'9¼"; 3. Fyedoseyev (USSR) 53'3½"; 4. Jaskolski (Poland) 52'6¾"; 5. Jocic (Yugoslavia) 51'5¼"; 6. Einarsson (Iceland) 51'3".

HJ, Brumel (USSR) 7'3"; 2. Pettersson (Sweden) 6'11⅞"; 3. Shavlakadze (USSR) 6'10¼"; 4. Bolshov (USSR) 6'9⅛"; 5. Czernik (Poland) 6'9⅛"; 6. Duhrkop (Germany) 6'9⅛".

PV, Nikula (Finland) 15'9"; 2. Tomasek (Czech) 15'1¼"; 3. Nystrom (Finland) 15'1¼"; 4. Ankio (Finland) 14'11¼"; 5. Houvion (France) 14'11¼"; 6. Lesek (Yugoslavia) 14'11¼".

SP, Varju (Hungary) 62'4¾"; 2. Lipsnis (USSR) 60'3¾"; 3. Sosgornik (Poland) 59'11"; 4. Komar (Poland) 59'¾"; 5. Nagy (Hungary) 58'11½"; 6. Skobla (Czech) 58'7½".

DT, Trusenyov (USSR) 187'4½"; 2. Koch (Holland) 183'7"; 3. Milde (Germany) 182'; 4. Piatkowski (Poland) 180'10½"; 5. Kompanyeyets (USSR) 179'7"; 6. Szecsenyi (Hungary) 179'4".

JT, Lusis (USSR) 269'2"; 2. Tsibulenko (USSR) 255'7½"; 3. Nikiciuk (Poland) 254'9½"; 4. Machowina (Poland) 253'1½"; 5. Kulcsar (Hung) 252'3"; 6. Lievore (Italy) 246'10½".

HT, Zsivotzky (Hungary) 228'5½" (European record); 2. Baltovskiy (USSR) 219'7"; 3. Bakarinov (USSR) 218'5"; 4. Thun (Austria) 215'; 5. Cieply (Poland) 211'1"; 6. Rudenkov (USSR) 209'9".

400R, Germany 39.5; 2. Poland 39.5; 3. Great Britain 39.8; 4. France 40.0; 5. Italy 40.3; 6. Hungary 40.5.

1600R, Germany 3:05.8; 2. Great Britain 3:05.9; 3. Switzerland 3:07.0; 4. Sweden 3:07.7; 5. Italy 3:07.8; 6. France 3:08.9.

Decathlon, Vas. Kuznyetsov (USSR) 8026 pts; 2. von Moltke (Ger) 8022 pts; 3. Bock (Germany) 7835 pts; 4. Kamerbeek (Neth) 7724 pts; 5. Holdorf (Germany) 7523 pts; 6. Dyachkov (USSR) 7400 pts.

20 km. Walk, Matthews (GB) 1:35:54.8; 2. Reimann (Ger) 1:36:14.2; 3. Golubnichiy (USSR) 1:36:37.0; 4. Vedyakov (USSR) 1:37:23.6; 5. Back (Sweden) 1:38:16.2; 6. Lindner (Germany) 1:38:34.8.

50 km. Walk, Pamich (Italy) 4:18:46.6; 2. Pamitchkine (USSR) 4:24:35.6; 3. Thompson (GB) 4:29:00.0; 4. Hisehne (Ger) 4:29:37.8; 5. Ljunggren (Sweden) 4:30:19.8.

Atterberry Beats Morale

VASTERAS, SWEDEN, Aug. 24 -- National AAU champion Willie Atterberry equalled the best time of his European tour to beat Italy's highly-regarded Salvatore Morale, 51.2 to 51.3, in a 400 hurdles race. Considering the water-logged track, the times were very fast. Bob Hayes continued unbeaten at 100 meters by whipping Dave James, 10.5 to 10.8, while Ulis Williams won the 400 in 47.3. Ralph Boston scored the other American victory with a 24'8" broad jump but an American who did not win was Jim Dupree, beaten by Belgium's Jozef Lambrechts, 1:50.7 to 1:50.6. 200, Ottolina (Italy) 21.2; 2. Jonsson (Sweden) 21.2.

Thomas Downs Pettersson

MALMO, SWEDEN, Aug. 30 -- John Thomas evened his series with Sweden's Stig Pettersson at 2-2 by leaping 6'10⅜" and beating the Swede on the countback. Several other Americans also did well. Bob Hayes whipped teammate Paul Drayton in the 100 meters, 10.2 to 10.5, and Drayton turned around and beat Sweden's Ove Jonsson in the 200, 21.0 to 21.1. Ulis Williams won the 400 in 47.9 and Jim Dupree took the 800 in 1:52.6. Ralph Boston was a double winner, taking the 110 hurdles in 14.2, equal his best of the season, and winning the broad jump at 24'9¾". Harald Norpoth, Germany's 20-year-old middle distance man, tangled with sub four-minute milers, Bill Dotson and Keith Forman, in the 1500 and the German won in 3:50.0. Dotson was second in 3:51.6 and Forman ran 3:51.7.

Jerome Ties World 100-Yard Mark

VANCOUVER, CANADA, Aug. 25 -- Canada's Harry Jerome, who already holds a share of the world 100-meter record, gained another piece of a record today when he tied the world 100-yard dash record of 9.2 in an all-comers meet at Empire Stadium.

Jerome, now an Oregon senior and recently selected as one of Canada's representatives in the British Empire Games, tied the record first set by Villanova's Frank Budd and tied by Bob Hayes earlier in the season. Jerome, who called his 9.2 "unbelievable," was timed in 9.2 by two of the official timers while the other timer caught him in 9.1. The following wind of 1.18 meters per second was within the allowable limit of 2.00 meters per second. Oregon State's Lynn Eves was a distant second in 9.6.

Two other University of Oregon students ran well. Vic Reeve lowered his personal best in the mile to 4:03.9 and Sig Ohlemann was a double winner, taking the 440 hurdles in an all-time best of 53.4 and also winning the 440 in 48.3.

From an American standpoint, the outstanding performance was the Canadian record 15'8" in the pole vault by Washington's Brian Sternberg, a national freshman record. Sternberg, whose previous best was 15'2¾", barely missed at 16'.

W. Germany Clocks 39.6,3:06.1

ZURICH, SWITZERLAND, Sept. 2 -- West Germany came up with two fast relay times while easily defeating Switzerland, 142-68, in an international dual meet. A German quartet of Klaus Ulonska, Peter Gamper, Jochen Bender and Manfred Germar ran 39.6 in the 400 relay, equal to the best in the world this year, while another German team of Hannes Schmitt, Johannes Kaiser, Jochen Reske and Manfred Kinder clocked 3:06.1 in the 1600-meter relay. Sept. 1: 100m, Gamper (G) 10.2; 2. Hebauf (G) 10.3. 400, Reske (G) 46.8. 110H, Schiess (S) 14.1. JT, Herings (G) 263'; 2. Salomon (G) 254'5½". Sept. 2: 200, Ulonska (G) 21.1 (non-scorer); 2. Schumann (G) 21.2. 800, Schmidt (G) 1:49.8. 1600R, 2. Switzerland 3:08.2.

Foik Sprints to 10.1

LODZ, POLAND, Sept. 2 -- Marian Foik moved into a tie for third on the all-time list with a 10.1 for 100 meters at Poland's final meet before the European Championships. There was no wind guage present but the wind was said to be only negligible. Jerzy Juskowiak was second in 10.2. Foik's time tied the best time in the world this year. Bob Hayes also has run 10.1. Foik also won the 200 in 20.8. Jerzy Kowalski lowered the Polish record in the 400 to 46.0 and Marian Machowina threw the javelin 266'7½" for other top performances. TripleJ, Schmidt 52'7¼". SP, Sosgornik 59'7¼". 400R, National Team 40.1.

Jazy Defeats Salonen Twice

HELSINKI, FINLAND, Sept. 2 -- Michel Jazy beat Olavi Salonen twice to lead France to a 108-104 victory over Finland. Yesterday Jazy whipped Salonen in the 800, 1:48.5 to 1:48.7, and today the Frenchman won again with a 3:42.0 in the 1500 as Salonen ran 3:43.1. Sept. 1: 400H, Rintamaki (F) 52.3. 3000SC, Siren (F) 8:45.4; 2. Texereau (Fr) 8:47.6 (NR); 3. Virtanen (F) 8:51.8. 200, Piquemal (Fr) 21.3. 800, 3. Chatelet (Fr) 1:49.8. 5000, Bogey (Fr) 14:03.8; 2. Vaillant (Fr) 14:05.4. SP, Kunnaes (F) 58'10" (NR). Sept. 2: 400, Rintamaki 47.6. DT, Lindroos (F) 181'1½"; 2. Alard (Fr) 178'11½" (NR). PV, Nikula (F) 14'11¼"; 2. Ankio (F) 14'11¼". 100m, Piquemal 10.6. JT, Macquet (Fr) 257'7½"; 2. Nevala (F) 254'8". TripleJ, Rahkamo (F) 52'4¼"; 2. Taminnen (F) 52'2".

Jerome Runs 9.2 Again

TORONTO, CANADA, Sept. 3 -- It was only last year that the first legal 9.2 was run but Harry Jerome of Canada is already looking forward to a 9.1 or 9.0 following his second 9.2 race in 10 days. Jerome tied the world 100-yard dash record at the Canadian National Exhibition meet on a track that was supposed to be slow.

However, Jerome proved otherwise as he easily beat Ira Murchison, who finished a distant second in 9.6. Jerome's first 9.2 came at Vancouver on Aug. 25 and tied the record set by Frank Budd last year and equalled by Bob Hayes in 1962. Bruce Kidd also

proved the track was quick as he ran his first three laps in 58, 2:00 and 3:01 to clock a 4:02.2 mile, the second fastest of his career. Teammate Bill Crothers was nearly five seconds behind in second. American Jack Yerman prepared for his up-coming African tour by winning the 880 in 1:52.1.

Humphreys Throws 190' 1 1-2"

HONOLULU, HAWAII, Sept. 3 -- The field event men turned in the top performances as the Pasadena Track Club participated in a Labor Day meet during their Hawaiian tour. Bob Humphreys had one of the top marks, a 190'1½" in the discus as Rink Babka was a distant second at 176. Parry O'Brien reached his season's best of 61'4½" in the shot but it was not enough to win as Dallas Long threw 62'½". Humphreys was third at 55'4". Dave Tork cleared 15'5½" and then tried 16'3" but had to settle for two close misses. Ron Ulrich won the javelin at 228'5". Track performances were generally slow with the top mark being Brian Polkinghorne's 14.5 in the highs. Dixon Farmer returned to action and won the 440 easily in 49.1. Tim Russell nipped Tom Hester in a 9.8 100 but Hester won the low hurdles around a turn in a good 24.0. Farmer, Hester, Russell and Polkinghorne teamed up to run a 1:27.0 in the 880 relay.

3 Victories for Americans

COPENHAGEN, DENMARK, Sept. 3 -- American athletes won three events in another of a series of international meets. Ralph Boston broad jumped 24'5", John Thomas high jumped 6'6¾" and Jim Dupree ran 1,000 meters in 2:22.8 for the U.S. firsts.

Connolly Starts Finnish Stay

TAMPERE, FINLAND, Sept. 4 -- World record holder Hal Connolly opened his year's stay in Finland by winning the hammer with a heave of 210'4½". The only other top mark in the meet was a 25'2" broad jump by Pentti Eskola.

Thomas Beats Pettersson Again

HALSINGBORG, SWEDEN, Sept. 5 -- John Thomas took a 3-2 lead over Sweden's Stig Pettersson by leaping 6'10⅝" as touring American athletes won five events. Ralph Boston took the broad jump at 24'3" and Paul Drayton scored a double, running 10.6 for 100 meters and 21.1 for the 200. Jim Dupree had the other win with a 1:52.4 in the 800.

Zsivotzky Raises Hammer Mark

BUDAPEST, HUNGARY, Sept. 8 -- Hungary's Gyula Zsivotzky became the top favorite for the European Championships hammer title when he raised his European record to 228'3½". He set the previous record of 228'1½" in 1960. His performance still kept him in the number two position on the all-time list. Sandor Eckschmidt of Hungary also set a personal best with his 215'3" in second place. SP, Varju 61'2¼". JT, Kulcsar 254'8".

Boston Broad Jumps 26' 1 1-2"

ITZEHOE, GERMANY, Sept. 9 -- Ralph Boston came up with the best leap of his current European tour when he jumped 26'1½". Boston also won the 100 meters in 10.6 but had the help of a wind of 2.6 meters per second, over the allowable limit. The only other American in the meet was Jim Dupree, who won the 800 in 1:52.3.

Foreign News

FRIEDRICHSHAFEN, GERMANY, Sept. 1: 100m, Wendelin 10.4; 2. Felsen 10.4.

EAST GERMANY 119, SWEDEN 91, Stockholm, Sept. 1: 400, Fernstrom (S) 47.2. 400R, East Germany 40.5. DT, Milde (G) 188'2" (NR). JT, Bade (G) 254'6½"; 2. Smiding (S) 249'11". HJ, Pettersson (S) 6'11⅛"; 2. Duhrkop (G) 6'10¼". Sept. 2: 200, Jonsson (S) 21.0. 800, Matuschewski (G) 1:50.9. 400H, Singer (G) 52.4. 3000SC, Dorner (G) 8:51.4; 2. Doring (G) 8:52.8. PV, Laufer (G) 15'1¼".

BERLIN, GERMANY, Aug. 28: 1000m, Lehmann 2:23.3.

EISENACH, GERMANY, Aug. 25/26: HJ, Duhrkop 6'9⅞". BJ, Beer 24'11¾".

KARKILA, FINLAND, Aug. 21: JT, Nevala 250'5½".

VAASA, FINLAND, Aug. 24: PV, Nikula 15'3"; 2. Ankio 15'3".

SIMPELE, FINLAND, Aug. 25: 4 MileR, Kaipolan Vire 17:08.0 (NR).

NORRKOPING, SWEDEN, Aug. 25/26: 400H, Tuominen (Finland) 52.0. HJ, Nillson (Sweden) 6'9½".

POTSDAM, GERMANY, Sept. 1/2: Decathlon, Grogorenz 7,050 pts.

LEIPZIG, GERMANY, Sept. 2: PV, Jeitner 15'1¼".

SARPSBORG, NORWAY, Aug. 30: PV, Cramer (USA) 14'9¼".

MELBOURNE, AUSTRALIA, Sept. 8: 2000m, Vincent 5:16.2 (NR); 2. Clarke 5:17.7. HJ, Morrish 6'8". SP, Selvey 56'2". TripleJ, Tomlinson 51'4".

NEWCASTLE, AUSTRALIA, Sept. 9: 220t, Lay 21.3. 440H, Welbourne 52.7.

BRISBANE, AUSTRALIA, Sept. 9: 880, Blue 1:50.1.

PRAGUE, CZECHOSLOVAKIA: 5000, Jurek 13:54.4 (13:28.4 3 miles). PV, Tomasek 14'11¼". SP, Skobla 59'8¼".

MOSCOW, RUSSIA: 400R, USSR national team (Tuyakov, Ozlolin, Prokhorovskiy, Politiko) 40.3.

WALCZ, POLAND: 800, Baran 1:48.4. 3000m, Zimny 8:01.4; 2. Boguszewicz 8:01.8; 3. Krzyszkowiak 8:06.6. BJ, Gawron 25'5¼". DT, Piatkowski 189'10".

SAN DONATO, ITALY: 200, Ottolina 20.9. JT, Lievore 253'1½".

OSTRAVA, CZECHOSLOVAKIA: 1500, Salinger 3:44.4. 3000m, Jurek 8:05.4. HT, Matousek 214'1".

REYKJAVIK, ICELAND: TripleJ, Einarsson 51'9¾".

HURLINGHAM, ENGLAND: 1600R, Great Britain (Wilcock, Metcalfe, Brightwell, Overhead) 3:06.0.

BELGRADE, YUGOSLAVIA: SP, Jocovic 59'1¾" (NR). PV, Arapovic 14'10" (NR).

RADOM, POLAND: SP, Komar 60'½". JT, Sidlo 253'8½".

BERGEN-OP-ZOOM, NETHERLANDS: 800, Pellez (France) 1:50.1; 2. Iundt (France) 1:50.4; 3. Van Asten (Neth) 1:50.7.

ASIAN GAMES, Djakarta, Indonesia, Aug. 25-30: TripleJ, Sakurai (Japan) 51'1". 100m, Sarengat (Indonesia) 10.5. 400H, Ogushi (Japan) 52.2; 2. Ijima (Japan) 52.4. HJ, Sugioka (Japan) 6'9⅞". JT, Miki (Japan) 244'7½". 400, Milkha Singh (India) 46.9. 110H, Sarengat 14.3; 2. Raziq (Pakistan) 14.3. HT, Okamoto (Japan) 209'7". 1500, Mohinder Singh (India) 3:48.6. PV, Morita (Japan) 14'5¼"; 2. Yamazaki (Japan) 14'5¼". 200, Jegathesan (Malaya) 21.3. 1600R, India 3:10.2. Marathon, Negata (Japan) 2:34:54.2. 3000SC, Mabarik Shah (Pakistan) 8:57.8; 2. Yokomizo (Japan) 8:58.8. 5000, Mabarik Shah 14:27.2. 400R, Phillippines 41.3. Decathlon, Gurbachan Singh (India) 6723 points.

Bulletin Board

Next Newsletters Oct. 10, 31. Track & Field News mailed Oct. 25.

Who do you think will win at the 1964 Olympics? Send in your predictions for the men's events (except the walks and marathon). The results will be totaled and published in a later edition of Track Newsletter.

BEHIND THE RECORD BREAKING (continued from page 25)

research is needed."

Maryland's Jim Kehoe summarizes the weight-training question well with this critique, "Generally speaking there can be no doubt that weight training has had a very positive improvement in track marks pertaining to all areas of effort and endeavor. This would include, of course, the sprinters through the distance men, the weight men as well as the jumpers. I would be inclined to feel the heaviest weight improvement would probably apply to the weight men, but certainly all track and field men, generally speaking, show improvement through weight training programs. I might add, however, that weight training is like anything else, there are right and wrong ways to approach any objective and unwise and unrealistic training programs can be as harmful as a sensible and intelligent program can be beneficial."

Bob Karnes of Drake strikes a non-physical chord on the weight question. "A great value in all cases is that the additional work with weights has helped develop a greater mental discipline. Weight training has given the performer greater performance. It also has helped boys with natural ability, but lacking in strength."

Moving into specifics a majority feels weight training aids the sprinter. "It is a definite help," writes Jordan. "Good strength generally gives good speed."

Leading a dissenting block was Baylor's Jack Patterson, who has developed a fine flotilla of dashmen in recent years. He contends

(continued on page 28, column one)

TRACK NEWSLETTER

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BEHIND THE RECORD BREAKING (continued from page 27)

weight training has helped chiefly the arms and chest, and has had very little to do with aiding sprinters. He was joined in this thesis by Canham and Johnny Morriss of Houston.

Oliver Jackson, the man who developed Bobby Morrow at Abilene Christian, takes the middle of the road view. "Weight training has contributed to the development of additional overall body strength of some sprinters. Yet, I doubt that it has been a major factor in mass improvement."

There is an almost equal split of opinion when the question moves into middle distance running. Patterson, Morriss and Canham continue to hold that weight training was practically no help. Percy Beard of Florida concedes that it is, up to a point, "As the distance increases, I think weight training is less important, except perhaps, when weights are carried during at least part of the running workout."

Jordan lists weight training as a "reasonable help" in this category, because "the upper body strength aids ability to get the finishing kick." Bill Bowerman of Oregon also cites the upper-body attribute.

Logically the split remains the same over long distance running. Morriss dismisses weight training as "very little help." He concentrates his forces on chin-ups, push-ups and hand walking.

There is only slight modification in the mass agreement that weight training has been the greatest factor in weight event advancement. "It has been a great help," says Jordan, but for goodness sakes let it be known that it takes a darn sight of running plus good technique work too."

Lumping the weights and jumps together, Patterson lists the shot, discus and pole vault as greatly benefitted, but feels the javelin, broad jump and high jump are not benefitted so much.

"With greater strength derived from weight training, implements are being thrown farther," Warner says. "Weight training helps develop greater speed of muscle contraction and strengthens more muscle fibers, which provides greater power and explosive action."

Weight training's contribution to the advancement of jumpers is viewed as solidly as the case for weight heavers. Canham, in fact, feels improvement in this category is second only to that of the implement throwers because of the same type training. Pole vaulters, he declares, "probably get as much out of weight training as the weight men do."

Opinion is unanimous that weight training, Patterson limits this to leg weights, increases explosion leg power, spring, and endurance, as well as building upper body strength in the arms, shoulders, chest and back for vaulters.

On the matter of improved equipment, Kehoe says, "In my opinion the most positive contributions have been in the vaulting and javelin events, with improved running and jumping shoes next in order."

As could be expected the fiberglass vaulting pole draws heaviest comment in this category.

There is uniformity of opinion that design and manufacture have helped athletes in this event, for these reasons. Poles, like baseball bats, now are being tailored to the vaulters' height, grip-height and weight. He can replace damaged poles with a duplicate. There is more consistency in the action of modern poles than was true with the old ash and bamboo sticks. However, the fiberglass wand does not receive complete certification as an automatic accelerator for all vaulters.

Easton gives this chronological analysis, "The metal pole is some improvement over bamboo because it gives more confidence and allows a better hand-stand. It is an advantage to a big-heavy vaulter with good pull-strength and hand-stand strength. Also, more safety is a factor in the metal pole. We are now in the third stage, the spun-glass pole. This adds a foot to any good vaulter and to some mediocre ones also. However, it takes a well-coordinated acrobatic vaulter to use this pole. He must be a high-bar artist, although he doesn't need great speed. Glass probably has twice the whip of metal and even more than bamboo, which frequently broke."

Jordan admits new poles are a help, but also they have created problems. "The problems of consistency are less with metal and greater with glass," he says. "Too, glass seems to have a catapult action only for certain body types."

There is not a dissenting opinion that modern javelin designs have brought about mass improvement. These important points are cited by some or all: 1. Increased diameter of the javelin has increased gliding ability; 2. Metal javelins cut down vibrations, give uniform balance, do not dry, absorb moiture, nor warp. As Bowerman puts it, "Now it's an instrument. It was a stick."

Easton adds, "The event actually has fallen back a little since outlawing of the big-bellied Held javelin. However, the present javelin is not as thin as the pre-Held javelin, and is metal, which holds up better as to shape and allows a man to have one javelin all year. This is an advantage."

Most members of the panel feel that shoes have contributed to overall track improvement because of greater comfort if nothing else.

Easton details something more. "Modern shoes are much improved," he cites. "They are lighter, fit the foot better, have removeable spikes which can be used on any surface, and have a protective heel built-in. All this appeals to the runner. Jumping shoes fit better. The pre-war shoe did not have removeable spikes, did not fit as well, and was not as light."

"Shoes now are specially designed, particularly the Germans and Finns," Bowerman points out. "The U.S. shoe makers are at least 15 years behind."

Canham is the only semi-heretic. He concedes that sprint and jump shoes have had an effect toward improvement, but contributions have been very small in other events. Then he says, "The 30-year-old Spaulding T shoe was as good or better than any shoe made today."

Canham also is a holdout against the theory that modern ring composition for weight men has pushed marks upward. "This has had very little contribution," he states. "Many of the world's best marks were made from clay, not asphalt or cement."

There is universal agreement among the others. All cite greater throwing consistency and greater speed because of the sameness of surfaces and because the modern hard-surface aprons are affected only slightly by foul weather. All agree too, that there is more equity in competition since the last man in a flight of throwers is not handicapped by holes and cuts dredged by previous heavers as was the case in the cinder and clay days.

The pattern is the same on the question of how much hard-surfaced takeoffs have contributed to jumping improvement. Again there is agreement that more consistency and speed (the pole vault and broad jump) is created, greater confidence is engendered (especially in the high jump) and fair competition assured because of elim elimination of cutting and holing.

Most of the coaches agree that even sprinters, middle distanve and distance runners are taller and heavier than a generation or two ago. Even those that feel there is little or no difference in size add "but stronger" to their view.

Canham strikes a leading keynote with this quote, "In general this has to be true on the average. The human race is simply getting taller, heavier and stronger. Many studies have shown this. There are exceptions in every era, but on the average athletes are taller and stronger and this has contributed to better performances."

Most popular stump in the entire symposium was that concerning the part specialization has played in mass improvement. Most agree that it has, but the reasons were variable and far-reaching. And the reasons which are forcing a specialization are not all derived from athletics.

Furthermore, many feel that the greats of yesteryear such as Jess Hill, Jackie Robinson, the late Jess Mortensen, the late Al Blozis and Cy Leland still could perform just as spectacularly today in an age where multi-sport athletes are supposed to be disappearing as alarmingly as the whooping crane.

"Specialization probably has contributed," says Jordan, "but the fact that greater numbers now take part is a very key question. It is rather doubtful in my humble opinion whether such men could keep up with the competition by dividing energies beyween two or more sports. This is especially a problem today with the heavy emphasis on football. The academic rigors play a definite part. Frankly, I feel it is not so much specialization, but rather intensity of preparation and training that will not allow a man to spread himself too thin."

"There are still many two sport athletes," says Canham, "but practically none of these are world champions. At Michigan the football staff encourages boys to compete in track as well as football. Ben McRae, Big Ten hurdles champion, and Dave Owen, former NCAA shot put champion, are examples. I'm quite certain, however, that men who miss fall track practice for football never attain the heights they could in track had they concentrated more. The above athletes could have been even greater than they were."

All agree that changes in techniques have contributed to mass improvement. But few coaches blanketed all events with this reason. Specific events, chiefly the weights and jumps, are singled out. Some list only two or three even in this category.

Canham couples technique with better informed coaches teaching these techniques and improving them further. "Movies, technical articles, clinics all have played a part in more well-informed coaches. All events save the sprints have been affected about equally, the reason is that in the sprints an athlete can usually thank his ancestory rather than his coach."

"I believe," says Warner, "that motion pictures shown to other than the athletes themselves have interested others in participating, thus bringing greater numbers to the sport, which also contributes to improvement of standards."

1962 Relay Rankings

Listed below are the best relay performances in the United States in 1962. The first six teams are ranked in the order in which they appeared in the September issue of TRACK & FIELD NEWS. The remaining teams on the 25-deep list are ranked according to best time. No ranking was made in the shuttle hurdle relay because of little action in this event.

440 YARD RELAY

1. OREGON
40.8 (1) Far West R
40.4 (1) Eugene, 4/28
40.5 (1) Eugene, 5/5
40.7 (1) Far West Ch.
40.0 (1) California R
DISQ. Corvallis, 5/30

2. S.C. STRIDERS
41.9 (1) Long Beach R
41.4 (2) Easter R
40.4 (1) Mt. SAC R
40.1 (2) California R

3. TEXAS SOUTHERN
41.4 (1) Austin, 3/3
40.2 (1) Border Olympics
40.6 h(1) Texas Sou. R
40.8 (1) Texas Sou. R
40.5 (1) Texas R
DISQ. Pelican St. R
41.3 (1) Kansas R
DISQ. Drake R
40.5 (1) SWAC Champs.
40.3 (1) Coliseum R
40.2 (3) California R
41.2 (1) NAIA Champs

4. FLORIDA A&M
41.7 (1) Coral Gables, 3/17
40.6 (1) Fla. A&M R
41.1 (1) Ala. St. R
40.8 h(1) Drake R
41.5 (1) Drake R
40.5 (2) Coliseum R
40.3 (1) SIAC Champs
41.0 (1) Tuskegee R
40.3 (4) California R

5. OKLAHOMA
(2) Tempe, Ariz. 3/24
41.5 (1) Arkansas R
40.8 (1) Kansas R
41.4 (1) Drake R
40.7 (1) Stillwater, 5/13
40.7 (1) Big Eight Champs

6. ARIZONA
41.5 (2) Tempe, 3/17
40.9 (1) Texas Western R
40.7 (2) Mt. SAC R
41.2 (1) West Coast R
41.0 (4) Coliseum R

7. ARIZONA STATE
40.7 (3) Mt. SAC R

8. ABILENE CHRISTIAN
41.0 (1) Border Olympics
40.9 (1) Texas Relays
41.2 (1) Abilene, 4/14
41.6 (1) Penn Relays
40.8 (3) Coliseum R

9. NEBRASKA
41.2 (3) Kansas R
41.4 (2) Drake R
40.8 (2) Big Eight Champs

10. McMURRY
40.8 (1) Texas I.C. Ch.

11. Texas 40.9
Tennessee A&I 40.9
13. Oregon State 41.0n
UCLA 41.0n
Texas All-Stars 41.0
16. Baylor 41.1n
NE Louisiana 41.1
San Jose St. 41.1
19. Grambling 41.2n
Santa Clara VYV 41.2n
21. Villanova 41.3
San Jose St. fr. 41.3n
23. Long Beach St. 41.4
Colorado 41.4
25. Texas A&M 41.5n

880 YARD RELAY

1. TEXAS SOUTHERN
1:25.4 (1) Austin, 3/3
1:25.3 (1) Texas Sou. R
1:23.7 h(1) Texas R
1:24.0 (1) Texas R
1:25.2 (1) Pelican St. R
1:24.8 (1) Kansas R
1:25.7 (3) Drake R
1:23.7 (2) Coliseum R
1:24.1 (1) California R

2. FLORIDA A&M
1:26.8 (1) Ala. St. R
1:25.3 (1) Drake R
1:23.4 (1) Coliseum R
1:26.0 (1) Tuskegee R
1:24.6 (3) California R

3. ARIZONA STATE
1:26.4 (1) Arizona R
1:25.7 (1) Long Beach R
1:24.1 (1) Mt. SAC R
1:24.5 (1) West Coast R
1:24.0 (3) Coliseum R

4. S.C. STRIDERS
1:25.7 (1) Easter R
1:24.2 (3) Mt. SAC R
1:24.3 (2) California R
1:24.6 (1) Compton Invit.

5. ABILENE CHRISTIAN
1:26.5 (1) West Texas R
1:23.6 (1) Texas R
1:25.2 (4) Coliseum R

6. OREGON STATE
1:25.3 (2) Far West R
1:24.1 (2) Mt. SAC R
1:24.9 (2) West Coast R

7. ARIZONA
1:24.3 (4) Mt. SAC R

8. COLORADO
1:25.4 (2) Kansas R
1:24.7 (1) Colorado R

9. BAYLOR
1:24.9 (1) Kansas R

10. Villanova 1:25.0
Oregon 1:25.0
12. San Jose State 1:25.2n
13. Manhattan 1:25.3n
New Mexico 1:25.3n
15. Oklahoma 1:25.4n
McMurry 1:25.4
Wisconsin 1:25.4n
18. Purdue 1:25.6
19. NE Missouri 1:25.7n
Morgan State 1:25.7n
21. Michigan State 1:25.8n
22. NE Louisiana 1:25.9
23. Grambling 1:26.1n
Sou. Methodist 1:26.1n
Santa Clara VYV 1:26.1n

ONE MILE RELAY

1. ARIZONA STATE
3:12.5 (1) Long Beach R
3:11.1 (1) Tempe, 3/17
3:10.2 (1) Tempe, 3/24
3:14.5 (1) Tempe, 3/29
3:10.5 (1) Tempe, 3/31
3:14.0 (1) Tempe, 4/5
3:10.6 (1) Tempe, 4/18
3:07.5 (1) Mt. SAC R
3:14.5 (1) Tempe, 5/5
3:10.0 (1) West Coast R
3:06.1 (1) Coliseum R
3:06.4 (1) California R
3:05.7 (1) Compton Invit.

2. SOUTHERN CALIFORNIA
3:14.2 (2) Long Beach R
3:10.4 (2) Tempe, Ariz. 3/24
3:14.0 (1) Berkeley, 3/31
3:13.3 (1) Los Angeles, 4/7
3:13.1 (1) Los Angeles, 4/21
3:08.0 (2) Mt. SAC R
3:15.4 (5) West Coast R
3:07.3 (2) Coliseum R
3:13.4 (1) AAWU Ch.
3:07.5 (2) Compton Invit.

3. TEXAS SOUTHERN
3:12.5 (1) Border Olympics
3:13.4 (1) Texas Sou. R
3:09.0 (1) Texas R
3:13.3 (1) Pelican St. R
3:11.6 h(1) Kansas R
3:11.0 (1) Kansas R
3:11.4 h(1) Drake R
3:13.9 (1) Drake R
3:12.7 (1) SWAC Ch.
3:07.8 (3) Coliseum R
3:10.9 (1) Gulf AAU
3:08.9 (3) California R

4. OREGON STATE
3:10.6 (1) Far West R
3:12.6 (1) Corvallis, 4/7
3:11.2 (1) Pullman, 4/21
3:20.1 (6) Mt. SAC R
3:12.2 (2) West Coast R
3:07.6 (2) California R
3:10.3 (1) Corvallis, 6/9

5. S.C. STRIDERS
3:09.7 (3) Mt. SAC R
3:10.8 (6) California R
3:08.1 (3) Compton Invit.

6. COLORADO
3:10.0 (1) Kansas R
3:12.4 (1) Colorado R
3:14.0 (1) Boulder, 4/24
3:12.5 (1) Big Eight Ch.
3:10.0 (4) California R

7. ABILENE CHRISTIAN
3:10.0 (1) Texas R

8. SAN JOSE STATE
3:10.1 (4) Mt. SAC R
3:12.8 (3) West Coast R

9. CALIFORNIA FROSH
3:12.2 (2) Mt. SAC R
3:11.8 (1) N. Calif. Invit.
3:10.1 (5) California R

10. Oklahoma State 3:10.2n
11. Missouri 3:10.4n
12. Morgan State 3:10.6
13. NE Louisiana 3:11.0n
14. Baylor 3:11.3n
Santa Clara VYV 3:11.3
16. Quantico 3:11.4
17. Villanova 3:11.6n
18. Sou. Methodist 3:11.7n
Kansas 3:11.7n
Stanford 3:11.7
21. Yale 3:11.8n
22. San Jose St. fr. 3:12.0
New York U. 3:12.0
Brigham Young 3:12.0
Utah 3:12.0n
New Mexico 3:12.0n

TWO MILE RELAY

1. OREGON
7:26.6 (1) Far West R
7:20.2 (1) California R

2. SOUTHERN CALIFORNIA
7:38.2 (1) Long Beach R
7:28.7 (2) Mt. SAC R
7:28.1 (2) West Coast R
7:20.6 (1) Coliseum R

3. TEXAS SOUTHERN
7:30.6 (1) Texas R
7:43.1 (1) Kansas R
7:35.5 (1) Drake R
7:22.1 (2) Coliseum R

4. SOUTHERN ILLINOIS
7:27.7 (2) Texas R
7:33.8 (3) Kansas R
7:25.0 (1) Carbondale, 5/5
7:22.3 (2) California R

5. KANSAS
7:27.7 (1) Texas R
7:27.4 (2) Kansas R
7:35.0 (1) Drake R
7:25.7 (2) Carbondale, 5/5
7:22.5 (3) California R

6. OCCIDENTAL
7:38.4 (2) Long Beach R
7:24.7 (1) Mt. SAC R
7:28.1 (1) West Coast R
7:22.8 (3) Coliseum R
7:23.4 (4) California R

7. MISSOURI
7:28.0 (1) Arkansas R
7:24.2 (1) Kansas R

8. STANFORD
7:28.3 (4) Coliseum R

9. CAMP PENDLETON
7:34.0 (2) Easter R
7:29.2 (3) Mt. SAC R
7:34.7 (5) California R

10. Los Angeles TC 7:31.3
11. Oklahoma 7:31.4n
12. Florida A&M 7:33.1
13. Sou. Methodist 7:34.3n
14. Arizona 7:34.6n
15. Michigan 7:37.8
16. Howard Payne 7:37.9n
17. Fordham 7:38.3n
18. Holy Cross 7:38.5
19. Georgetown 7:39.0
20. UCLA 7:40.1n
21. Iowa 7:41.0n
22. Drake 7:41.9n
23. Los Angeles St. 7:42.0
24. Brigham Young 7:42.4
25. Manhattan 7:43.0n

FOUR MILE RELAY

1. OREGON
16:08.9 (1) West Coast R

2. KANSAS
16:53.1 (1) Kansas R
16:57.0 (1) Drake R

3. SOUTHERN ILLINOIS
17:04.5 (2) Kansas R
17:03.2 (2) Drake R

4. NEBRASKA
17:01.8 (1) Texas R
17:04.6 (3) Kansas R
17:15.4 (3) Drake R

5. HOUSTON
17:03.0 (2) Texas R

6. MICHIGAN
17:12.5 (1) Penn R

7. PENN STATE
17:13.7 (2) Penn R

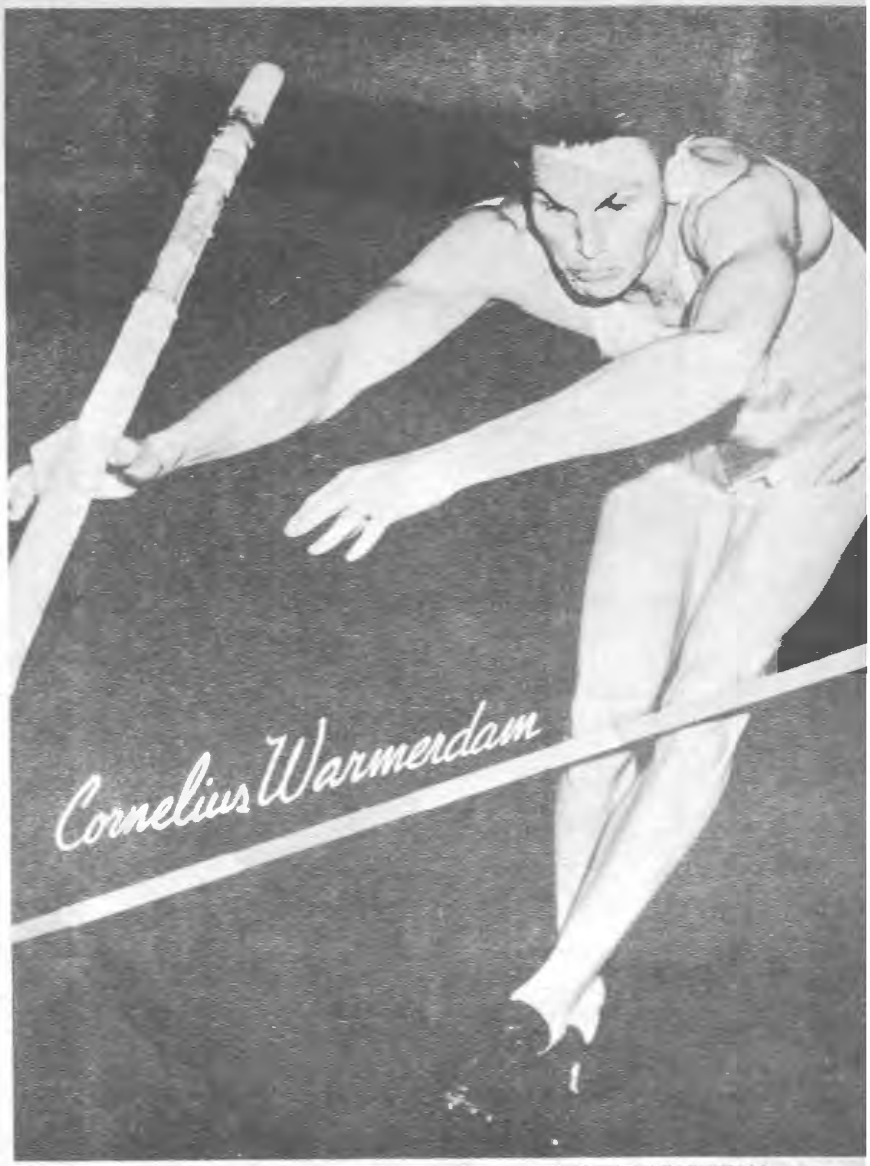
8. GEORGETOWN
17:15.0 (3) Penn R

9. VILLANOVA
17:15.4 (4) Penn R

10. IOWA
17:17.6 (4) Drake R

11. Michigan State 17:21.0n
12. Western Michigan 17:24.5n
13. Cerritos JC 17:30.5

All-time great JOHN WOODRUFF of Pittsburgh was the 1936 Olympic 800 champion and a three-time NCAA 880 titlist.



Perhaps the greatest pole vaulter of all time is DUTCH WARMERDAM, whose world record of 15'7½" stood for nearly 15 years. He now coaches at Fresno St.

JOHN SAUNDERS, JIM DUPREE, BILL CORNELL and BRIAN TURNER formed the Southern Illinois distance medley relay team in 1962.

Hurdler RAY CUNNINGHAM of Texas ran 13.9 and 23.3 in 1962. He was sixth in the NCAA high hurdles.

Texas Southern's crack sprint medley team ranked third in the 1962 relay rankings with a best of 3:19.8. Team members incl

JACK TORRANCE of Louisiana State set a world shot put record of 57' 1" in 1934 and the record stood until 1948. Torrance weighed 310 pounds.

Finland's PAAVO NURMI, the immortal "Flying Finn," set 29 world records in the 20's and 30's and won 7 Olympic titles.

...was rank-
...a season's
...t to right)

MAJOR ADAMS (880), OVERTON WILLIAMS (220), HOMER JONES (220) and RAY SADDLER (440). The team won at the Texas, Kansas and Drake Relays.

New York University won the mile relay crown at the Penn Relays. From left to right are: JIM BROWN, JIM WEDDERBURN, Coach JOE HEALEY, HAMILTON McRAE and CLIFF BERTRAND.

U.S. All-Time 5000 Meter List

13:45.0	Jim Beatty (Los Angeles TC)	Turku, Finland	8/24/62
13:49.6n	Max Truex (Los Angeles TC)	Compton, Calif.	6/ 2/62
13:53.2n	Laszlo Tabori (SCVYV)	Compton, Calif.	6/ 3/60
14:03.5	Dale Story (Oregon State)	Fresno, Calif.	5/12/62
14:04.8n	Bill Dellinger (USAF)	Warsaw, Poland	8/ 1/58
14:06.1n	Charles Clark (SCVYV)	Fresno, Calif.	5/12/62
14:11.0n	Lew Stieglitz (US Navy)	Helsinki, Finland	6/29/59
14:14.8n	Bud Edelen (Chelm. AC)	Prague, Czech.	6/23/62
14:17.7n	Paul Whiteley (Emp. St)	Eugene, Oregon	7/30/60
14:18.6n	Bob Soth (SC Striders)	Stanford, Cal.	7/ 1/60
14:20.0n	George Young (US Army)	Modesto, Calif.	5/28/60
14:22.3n	Merle McGee (LATC)	Compton, Cal.	6/ 2/62
14:23.1n	Phil Coleman (UCTC)	Houston, Texas	6/10/60
14:26.0n	Harry McCalla (Stanford)	Compton, Cal.	6/ 2/62
14:26.8	Fred Wilt (New York AC)	Helsinki, Fin.	6/29/50
14:27.0	Curt Stone (New York AC)	Los Angeles	6/27/52
14:27.4	Charles Capozzoli (Geo'twn)	Berlin, Germany	8/ 2/53
14:28.4	Dick Hart (una)	Fresno, Calif.	5/12/56
14:30.0n	Ralph Hill (SFOC)	Los Angeles	8/ 5/32
14:31.0n	Bill Boyd (Oregon State)	Walnut, Calif.	4/28/62
14:31.3n	Mal Robertson (una)	Los Angeles	5/18/62
14:31.5n	John Gutknecht (Balt. OC)	Stanford, Cal.	7/22/62
14:31.8n	Jerry Smartt (Houston)	Berkeley, Cal.	10/13/56
14:32.0n	Wes Santee (Kansas)	Los Angeles	6/27/52
14:32.1n	Alex Breckenridge (USMC)	Compton, Cal.	6/ 5/59

1962 RELAY RANKINGS

14. Baltimore OC	17:30.6
15. Camp Pendleton	17:31.5n
16. Los Angeles TC	17:31.9n
17. Princeton	17:32.6n
18. Texas	17:38.4n
19. Okla. State	17:39.0
20. Air Force	17:39.9n

SPRINT MEDLEY

1. SANTA CLARA VYV
   3:15.5 (1) California R
2. OREGON STATE
   3:22.6 (1) Mt. SAC R
   3:17.7 (2) California R
3. TEXAS SOUTHERN
   3:20.7 (1) Texas Sou. R
   3:21.5 (1) Texas R
   3:20.0 (1) Pelican St. R
   3:19.8 (1) Kansas R
   3:21.2 (1) Drake R
   3:21.1 (3) California R
4. MISSOURI
   3:19.0 (1) Drake R
5. TEXAS A&M
   3:24.5 (1) San Angelo R
   3:21.4 (1) Texas R
   3:21.3 (3) Drake R
6. SOUTHERN METHODIST
   3:26.7 (3) San Angelo R
   3:21.9 (3) Texas R
   3:20.2 (2) Drake R
7. OKLAHOMA STATE
   3:21.5 (2) Texas R
   3:23.1 (2) Kansas R
8. OKLAHOMA
   3:22.9 (1) Kansas R
   3:21.6 (4) Drake R
9. San Jose St. fr. 3:22.4n
10. Texas 3:22.5n
11. S.C. Striders 3:22.9n
12. Fordham 3:23.0
13. NE Louisiana 3:23.1
14. N. Texas State 3:23.4n
15. Auburn 3:23.6n
    Stanford 3:23.6n
17. New York U. 3:23.9n
18. Quantico 3:24.0
    Southern U. 3:24.0n
20. New Mexico St. 3:24.7
21. ACC frosh 3:24.8
22. Camp Pendleton 3:25.0n
23. Texas frosh 3:25.2n
24. Villanova 3:25.3n

(continued from page 29)

25. Mt. Sac JC 3:25.5

DISTANCE MEDLEY

1. OREGON
   9:36.2 (1) Far West R
2. SOUTHERN ILLINOIS
   9:50.5 (2) Texas R
   9:53.9 (1) Kansas R
   9:50.8 (1) Drake R
   9:41.1 (1) California R
3. KANSAS
   9:46.4 (1) Texas R
4. STANFORD
   9:47.2 (1) Mt. SAC R
   9:51.8 (2) West Coast R
5. SAN JOSE STATE
   9:47.2 (2) Mt. SAC R
   9:57.2 (3) West Coast R
   9:49.6 (2) California R
6. LOS ANGELES T.C.
   9:50.5 (1) Easter R
7. UCLA
   9:50.4 (1) West Coast R
8. NEBRASKA
   9:57.4 (2) Kansas R
9. SANTA CLARA VYV
   9:57.8 (2) Easter R
10. IOWA
   9:57.9 (3) Kansas R
11. Occidental 10:00.5n
    Houston frosh 10:00.5
13. Texas Southern 10:01.2
14. Emporia State 10:01.5n
15. Villanova 10:04.7
16. Houston 10:05.4n
    Foothill JC 10:05.4
18. San Mateo JC 10:05.6n
    Glendale JC 10:05.6n
20. Oregon State 10:05.7n
    Western Michigan 10:05.7n
22. Kearney State 10:06.2
23. Maryland 10:06.6n
24. Washington St. 10:07.0n
25. California 10:07.4n

480Y SHUTTLE HURDLE RELAY

1. Nebraska	58.8
2. Winston-Salem	59.3
3. Ft. Hays St.	59.6
4. Emporia St.	59.8n
5. Michigan State	1:00.0n
6. Notre Dame	1:00.1n
7. Yale	1:00.3n
8. Villanova	1:00.5n
9. Lincoln U.	1:00.8n

Statistics

Evolution of the world pole vault record:
(Note: The IAAF did not recognize a world record in this event until 1912.)

10'	3.05m	J. Wheeler, Great Britain	1866
10'6½"	3.21m	R.J.C. Mitchell, Great Britain	1868
10'9"	3.27m	H.E. Kayall, Great Britain	1877
10'11"	3.32m	William Van Houten, USA	1880
11'½"	3.36m	Hugh Baxter, USA	1883
11'5"	3.48m	Hugh Baxter, USA	1887
11'5¼"	3.48m	Walter Rodenbaugh, USA	1892
11'10½"	3.62m	Raymond Clapp, USA	1898
12'1½"	3.69m	Norman Dole, USA	1904
12'2"	3.71m	Fernand Gouder, France	1905
12'4¾"	3.78m	LeRoy Samse, USA	1906
12'5½"	3.79m	Walter Dray, USA	1907
12'7½"	3.85m	A.C. Gilbert, USA	1908
12'9½"	3.90m	Walter Dray, USA	1908
12'10¾"	3.93m	Leland Scott, USA	1910
13'1"	3.99m	Robert Gardner, USA	1912
13'2¼"	4.02m	Marc Wright, USA	1912
13'5"	4.09m	Frank Foss, USA	1920
13'6"	4.11m	Charles Hoff, Norway	1922
13'9¾"	4.21m	Charles Hoff, Norway	1922
13'10½"	4.23m	Charles Hoff, Norway	1925
13'11¼"	4.25m	Charles Hoff, Norway	1925
14'	4.26m	Sabin Carr, USA	1927
14'1½"	4.30m	Lee Barnes, USA	1928
14'4¼"	4.37m	William Graber, USA	1932
14'5"	4.39m	Keith Brown, USA	1935
14'6½"	4.43m	George Varoff, USA	1936
14'11"	4.54m	William Sefton, USA	1937
14'11"	4.54m	Earle Meadows, USA	1937
15'1"	4.59m	Cornelius Warmerdam, USA	1940
15'5¾"	4.72m	Cornelius Warmerdam, USA	1941
15'7¾"	4.77m	Cornelius Warmerdam, USA	1942
15'8¼"	4.78m	Bob Gutowski, USA	1957
15'9¼"	4.80m	Don Bragg, USA	1960
15'10¼"	4.83m	George Davies, USA	1961
16'¾"	4.89m	John Uelses, USA	1962
16'2"	4.93m	Dave Tork, USA	1962
16'2½"	4.94m	Pentti Nikula, Finland	1962

All-Time One-Mile List: (as of Sept. 21)

3:54.4	Peter Snell, New Zealand	1962
3:54.5	Herb Elliott, Australia	1958
3:55.9n	Merv Lincoln, Australia	1958
3:56.3	Jim Beatty, United States	1962
3:56.5	Siegfried Valentin, Germany	1959
3:56.7n	Jim Grelle, United States	1962
3:57.2	Derek Ibbotson, Great Britain	1957
3:57.5n	Ron Delany, Ireland	1958
3:57.5n	Murray Halberg, New Zealand	1958
3:57.6	Dyrol Burleson, United States	1961

Profiles of Champions

DAVID LAWSON "DAVE" WEILL, (USA) discus throw, 6'7½", 270 pounds, born Oct. 25, 1941, Berkeley, Calif. Student, Stanford University.

Progression to date:

1956	14	100'	30.48m
1957	15	120'	36.58m
1958	16	145'5"	44.32m
1959	17	158' (3 lb. 9 oz)	48.16m
1960	18	160'5"	48.90m
1961	19	186'7"	56.87m
1962	20	191'7½"	58.41m

The best collegiate thrower in the U.S. today, this young giant won the NCAA title last spring and also has the collegiate record. He was third in the National AAU meet and took the same place at the 1961 NCAA meet. An electrical engineering major, he plans to compete at least until 1964 and would like to throw over 200' next season.

Oregon State became the first Pacific Coast school to win the team title at the NCAA university division cross country meet when it scored 68 points last year. In fact, the Beavers also had the individual winner in Dale Story, who is back again this season.