August 11, 1939.

Dr. V. W. Lapp,
Wausau, Wisconsin,

Dear Dr. Lapp:

Thanks for your very prompt letter of the 9th instant. We immediately called Dr. Elbel and learned that he had the keys you turned over to him, and among them was the key to the skeleton cabinet.

Dr. Elbel is now up and around and he was able to come up for Olander's orals. Yes, Olander got through with flying colors.

Regarding Margaret Curd, she is located at Central College, Fayette, Missouri. She came to me and said that she heard there was an opening at that institution and she wanted to go down to interview the people. You perhaps recall that I was located at Central Missouri State Teachers College for a period of years from 1912 to 1919, and during that time we competed with and against Central College. Dean Puckett of Central had the same position when we were competing in that conference.

At that time both the Teachers Colleges and the College Union colleges were in the same Conference. Clingenpeel, who is now athletic director at Central, was a star football, basketball and baseball player for Central College. He later coached one year at Southern Methodist at Dallas, and then returned to Kemper Military Academy, then came back to Central College.

I was happy to write Dean Puckett and Coach Clingenpeel regarding Miss Curd and they took her on our recommendation. Miss Curd is tickled pink, and I believe that she will do a fine job of it. The only doubt which consisted almost of a fear, was that they were afraid these jitterbug university students would not be satisfied to settle in a small town like Fayette and be one of the populace. I assured them that Miss Curd had no bad habits and that she could adjust herself to a small community in splendid style.

Doubtless you know that Hanson was placed at Sabetha, Kansas. Dr. Wrightman, president of the board and a University of Missouri alumnus, was anxious to get a Kansas man and we were glad to

see Hanson placed in that position. The Aggies have always filled that position with their athletes for the last twelve years.

Everybody has been placed with the exception of Denis McDermond and Mary Learnard, and Mr. Chandler has high hopes of locating them before long. With our men, we are not sure about Nano Stukey, as he has been on so many angles that we haven't heard from him lately.

I am sorry that you are not located as yet. If at any time we can be of service to you it will be a pleasure for us to do anything possible.

Mrs. Hulteen was happy to hear from you. Our kindest regards to Mrs. Lapp and your fine son.

Very sincerely yours,

Director of Physical Education and Recreation,
Varsity Basketball Coach.

FCA:AH

UNIVERSITY OF KANSAS
LAWRENCE

DEPARTMENT OF PHYSICAL EDUCATION

Waukau, Wisconsin
August 9, 1939

Dear Dr. Allen:

In reply to your letter of August third, before leaving Lawrence I gave all of my remaining keys to Dr. Elbel. It seems to me that I gave Mrs. Hulteen a key or two earlier but I am not sure. I hope that you are not put to too much inconvenience in locating a means of getting the skeleton out of the closet.

We have been in Waukau most of the summer and I have finished my share of the intramural book. At the present time I do not have anything of a professional nature lined up.

We were sorry to hear of Dr. Elbel's illness and sincerely hope that he will make a speedy recovery.

I am sure that the Summer Session went as well as was expected. I would be interested in knowing if Miss Curd was placed and if Mr. Olander's degree was granted.

Please give our best regards to Mrs. Hulteen.

Very truly yours,

U. W. Lapp

Dr Allen

Q-205

Reprinted from the October issue of RESEARCH QUARTERLY

The Most Proficient Years at Sports and Games

By HARVEY C. LEHMAN

Ohio University

WHAT are the chronological ages at which men exhibit their greatest physical skill? What are the ages at which individuals are most likely to win (or retain) various kinds of championships? Study of the chronological ages at which men have achieved their most outstanding performance is, of necessity, limited to behaviors which can be evaluated or appraised, and which can therefore be dated with a reasonable degree of precision. In previous articles the present writer and his associates have presented factual data regarding the most creative years in the fields of science, invention, literature, and music.[1]* The present paper sets forth the chronological ages at which extraordinary proficiency has been exhibited most frequently by the following kinds of performers:

1. Professional baseball players
2. Professional pugilists
3. Amateur tennis players
4. Professional ice hockey players
5. Professional football players
6. Automobile racers
7. Corn huskers
8. Bowlers
9. Rifle and pistol shooters
10. Duck pin bowlers
11. Professional billiardists
12. Professional and amateur golfers.

METHOD

In the most recent edition of his *All Sports Record Book,* F. G. Menke lists for numerous sports and games the following information:[2] (1) The names of the annual champions, (2) the national and the world record-holders, and (3) the years during which both the annual champions and the record-holders won or retained their honors. In order to determine the chronological ages of the performers at the time they exhibited their superior abilities it was necessary to obtain their birth dates. The latter information was obtained by writing to the secretaries, or other executives, of organizations which control or which sponsor the various sports. The procedure that was employed for the study of professional baseball players will first be described.

PROFESSIONAL BASEBALL

Study of age differences in baseball proficiency would be a relatively simple task if all the major league players started to play in the major leagues at very youthful ages and if all continued to play in the major

*Indices refer to Bibliography at end of article.

leagues until they were quite old. In the latter case it would be possible to make a simple, direct comparison of the average performance of each successive age group. But, because selective factors operate so constantly and so relentlessly, it is not possible to employ the foregoing procedure. For this same reason the correlation technique is likewise quite useless for the study of age differences. Indeed, careful analysis of the available data reveals that the average proficiency of the several age groups that participate in major league baseball does not differ appreciably. This is due to the fact that the professional ball player is not employed by the league management until he has exhibited a high level of proficiency. And, as soon as a particular player falls below a very high standard of excellence, he is released by the management and no longer permitted to exhibit his lesser skill in the same class of baseball competition.

Since players are not permitted to remain in the major leagues when they fail to display very great skill, the writer has studied age differences in baseball proficiency by simply tabulating the ages of individuals whose names appeared in the successive annual editions of *Who's Who in Baseball*[3] from 1916 to 1938 inclusive.*

In the foreword of *Who's Who in Baseball,* the publishers make the following explanatory statement:

> This book, as its name implies, is devoted to the better known or more talented players of the two major leagues. *Who's Who* does not claim to present the records of all the major league players nor even of all the regulars. Such an attempt would be impossible, if for no other reason, because of the continually changing personnel of the big clubs.

If the editors of *Who's Who in Baseball* have succeeded in listing the more talented players of the two major leagues, tabulation of the ages of the players whose names are included each year should reveal the chronological ages at which baseball players are maximally proficient.† What are the chronological ages at which players most frequently exhibit such a high degree of baseball skill as to warrant inclusion of their names in *Who's Who in Baseball?*

Figure 1 presents a composite picture of the ages of the most talented major league players (other than pitchers‡) for a period of 22 years. This figure sets forth data for 3,126 player-years. As here used the term "player-year" posits merely one full year's performance in a major league club, plus inclusion of the player's name in *Who's Who in Baseball* for the succeeding year.§ Since the names of some

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*The issue of *Who's Who in Baseball* for the year 1922 (if there was one) was not available to the writer.

† It seems safe to assume that, in making their annual selections, the publishers of *Who's Who in Baseball* did not exhibit prejudice for or against any particular age groups.

‡ Data are presented separately for baseball pitchers.

§ Each edition of *Who's Who in Baseball* contains data for the previous year. It was therefore necessary to make allowance for the fact that the individual's playing

of the major league players are included more than once in *Who's Who in Baseball,* it should be clearly understood that Figure 1 does not present data for 3,126 different individuals. The 3,126 player-years were contributed by perhaps 500 to 600 different individual players. The following computation will enable the reader better to understand the cross-sectional data that are revealed in Figure 1:

22 = Number of editions of *Who's Who* that were canvassed.
3,126 = Total number of player-years during the 22-year period.
22) 3,126
142.09 = Number of player-years for each of the 22 seasons.
16 = Number of clubs in the two major leagues
16) 142.09
8.88 = Average number of players (excluding pitchers) included in *Who's Who* each year from each of the 16 major league clubs.

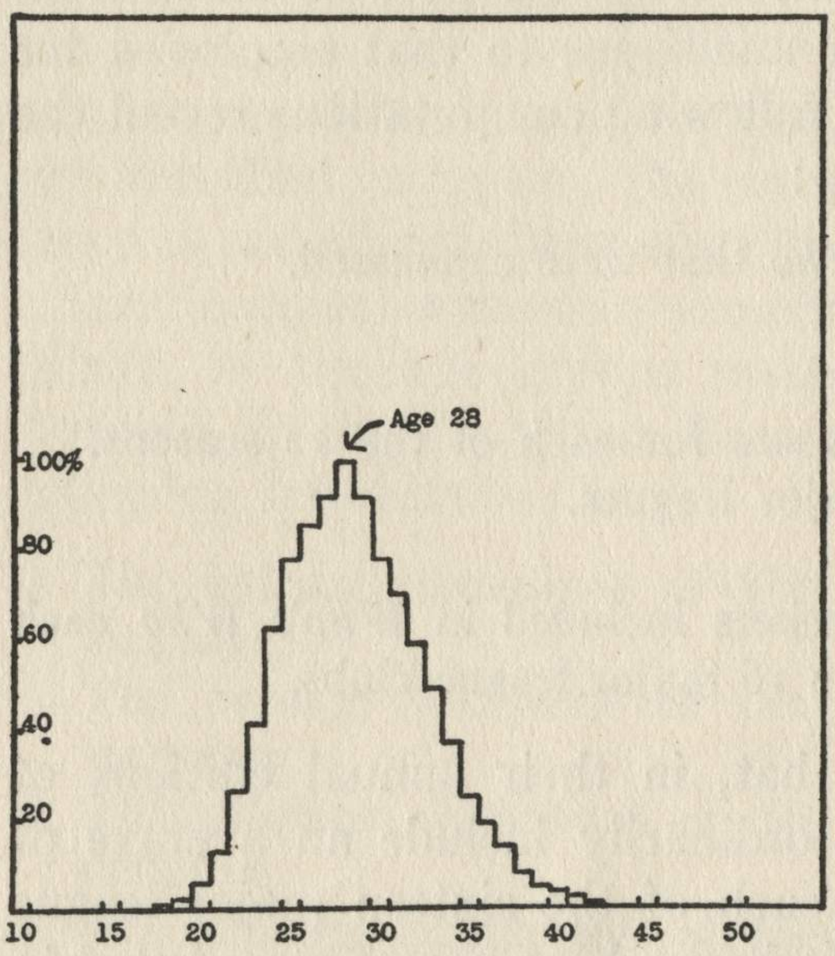

FIGURE 1. Chronological ages of major league baseball players (other than pitchers). A 22-year cross-sectional study involving 3,126 player-years.

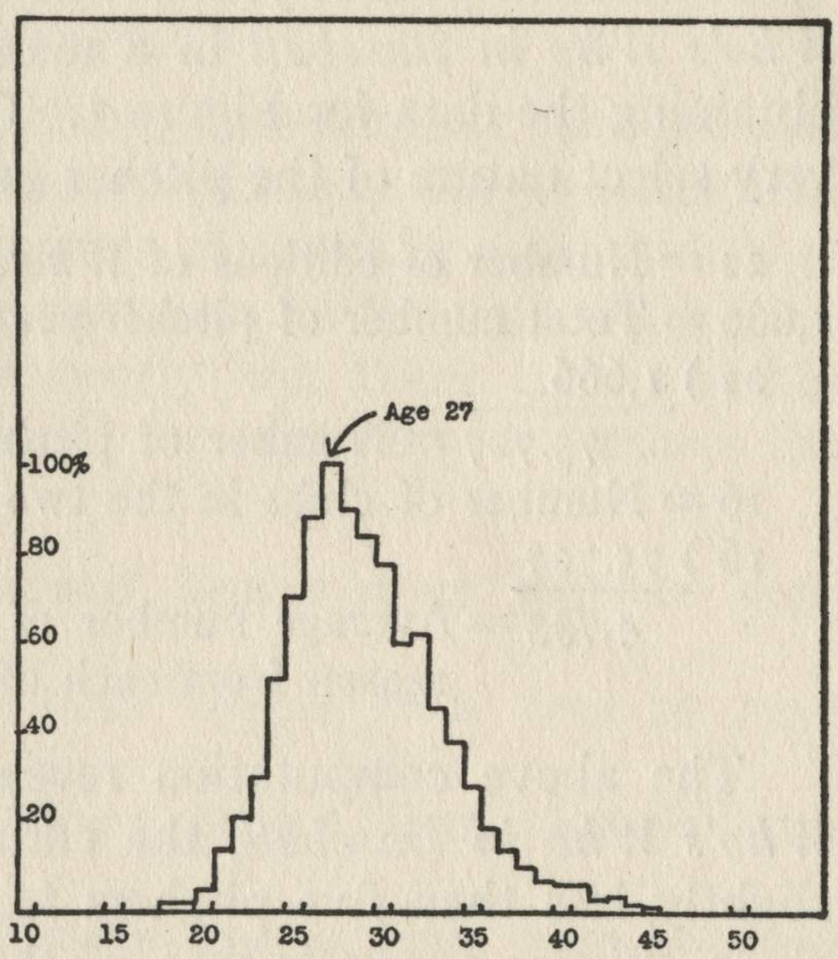

FIGURE 2. Chronological ages of major league baseball pitchers. A 22-year cross-sectional study involving 1,666 pitcher-years.

The foregoing computation reveals that, in compiling the annual editions of *Who's Who in Baseball,* the editors usually select an average of slightly less than nine men (excluding pitchers) from each of the sixteen major league baseball clubs. It seems obvious that, as a group, the individuals whose names are included during a given year in *Who's Who in Baseball* are the most talented baseball players of the United States (and of the world).

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skill was exhibited one year prior to the publication of a given edition of *Who's Who.* It was likewise necessary to allow for the fact that the baseball playing season does not coincide with the calendar year. Since *Who's Who* publishes the day and the month, as well as the year, of birth, the latter computation afforded no insuperable difficulty.

Figure 1 reveals that players' names are sometimes included in *Who's Who in Baseball* when the players are less than 20 years of age. And a few individuals are included in this very select compilation when they are past 40 years of age. However, the 28-year-olds (this means players between their 28th and their 29th birthdays) comprise the largest single age group. And the three age groups, 27, 28, and 29 inclusive, stand distinctly above the others in the extent to which they participate in major league baseball.* It should be realized, of course, that the foregoing statement implies that *general* baseball proficiency is probably greatest within the three above-mentioned age groups. With the available data, it would easily be possible to determine whether there exist statistically significant age differences with respect to such separate performances as batting, fielding, base-stealing, and so forth. The fact that such age differences may exist will be more fully realized when the reader examines Figure 2 which sets forth data for 1,666 baseball pitcher-years. The data for Figure 2 were obtained from *Who's Who in Baseball* in a manner analogous to that employed for obtaining the data for Figure 1. The following computations reveal the very select nature of the pitcher group:

22 = Number of editions of *Who's Who* that were canvassed.
1,666 = Total number of pitcher-years.
22) 1,666
75.727 = Number of pitcher-years for each of the 22 seasons.
16 = Number of clubs in the two major leagues.
16) 75.727
4.733 = Average number of pitchers included in *Who's Who* each season from each of the 16 major league clubs.

The above computation reveals that, in their annual editions of *Who's Who in Baseball,* the editors ordinarily include an average of slightly less than five pitchers from each of the sixteen major league clubs. Figure 2 reveals that, of the pitchers whose names were listed in *Who's Who in Baseball* for a period of 22 years, the 27-year-olds comprise the largest single age group. The modal age for the pitchers is thus one year younger than the modal age for players other than pitchers.

Figures 1 and 2 make no allowance for the fact that there is always a larger number of young than of older men in the population at large.†

*In constructing the graphs that accompany this article, the data for each of them were first reduced to a comparable basis by the following procedure: The peak of each statistical distribution was arbitrarily assigned a value of 100 per cent and the other numerals within the same statistical distribution were assigned proportionate percentage values. For example, in Figure 1, the peak of the distribution occurred at age 28. At this latter age the number of baseball player-years was 322. In Figure 1 at age 28 the figure 322 is plotted therefore as 100 per cent. At age 30 the number of player-years was 252. This figure is equivalent to 78 per cent of the maximum (78 per cent of 322) and in Figure 1 the numeral 252 is plotted therefore as 78 per cent. The foregoing method of plotting should be borne in mind when studying the graphs.

† This might not be true for a country which has had a declining birth rate for many years.

In order to avoid unfairness to the older age groups, one probably should compare the number of baseball players within a given age group with the total white male population of corresponding chronological age. The latter procedure enables one to answer the following question:—In proportion to the total number of living, eligible males, to what extent does each age group participate in major league baseball?

Since data for the years 1916 to 1938 inclusive* were utilized for constructing Figures 1 and 2, census data for 1920 and 1930 were combined in making allowance for the population differences at the several age levels. When the data were grouped by five-year intervals, and the correction for population differences was made, this correction changed the shape of the age curves only slightly, and the resultant age curves, for pitchers and for non-pitchers, were almost identical. Indeed, these curves yielded no hint that the modal ages of pitchers and of non-pitchers differ by a full year.

LEAGUE CHAMPIONS

League champions at batting, pitching, base-stealing, and the like are identified each year. The competition to win these league championships is exceedingly keen since the winners can usually command large salary increases when they are offered contracts for the succeeding year. Which of the age groups most frequently win these championship honors? In the *All Sports Record Book*[2] for 1936 Menke presents the following information: †

1. The batting champions of the National League from 1876 to 1936 inclusive.
2. The batting champions of the American League from 1900 to 1936 inclusive.
3. The pitching champions of the National League from 1876 to 1936 inclusive.
4. The pitching champions of the American League from 1900 to 1936 inclusive.
5. The stolen-base champions of both major leagues from 1907 to 1936 inclusive.

The birth dates of some of the above-mentioned champions were available in *Who's Who in Baseball.* But, since the first edition of *Who's Who in Baseball* did not appear until 1916, it was necessary to obtain the birth dates of the earliest champions from other sources as follows: (1) The Service Bureaus of the two major baseball leagues,‡ (2) biographies of baseball players, and (3) personal correspondence with a number of the early champions who are still living.

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* Excepting only for the year 1922.

† Except when otherwise stated, the data regarding championship performance were procured from Menke's books.

‡ The writer is indebted to Mr. Henry P. Edwards, Manager of the Service Bureau of the American League of Professional Baseball Clubs, and also to Mr. Wm. E. Brandt, Manager of the Service Bureau of the National League of Professional Baseball Clubs. Thanks are due also to individual players who provided the writer with their birth dates.

Tables I and II (rows 3, 4, and 5) reveal the chronological ages at which: (1) 96 major league baseball players were the batting champions (best-hitters) of their respective leagues, (2) 88 pitchers led their respective leagues at pitching, and (3) 63 players were league champions at base-stealing. Since there are more major league players at ages 25 to 29 inclusive than of any other five-year interval, one would naturally expect that this age group would contribute the most league champions. Table II reveals that this expectation is fulfilled. It will be noted from Table II that the age differences for the three kinds of championship performance are relatively slight and perhaps not statistically significant. With more data available future investigators will be able to determine for these separate performances whether or not significant age differences exist.

PROFESSIONAL PUGILISTS

The names of the champion boxers of the world and the years during which they won or retained their titles were procured from Menke. The birth dates of the pugilists were found in Romano's *Post Boxing Record*.[4] Figure 3 presents data for 133 world champions (of all weight classifications) who held their various boxing championships for a total of 448 years or fractions of years. Although in Figure 3 the peak of the age curve occurs at age 26, study of the data reveals that the age of maximum success varies somewhat for the different weight classifications.

Except when they are competing for the heavyweight championship, boxing contestants must meet certain specified weight requirements.

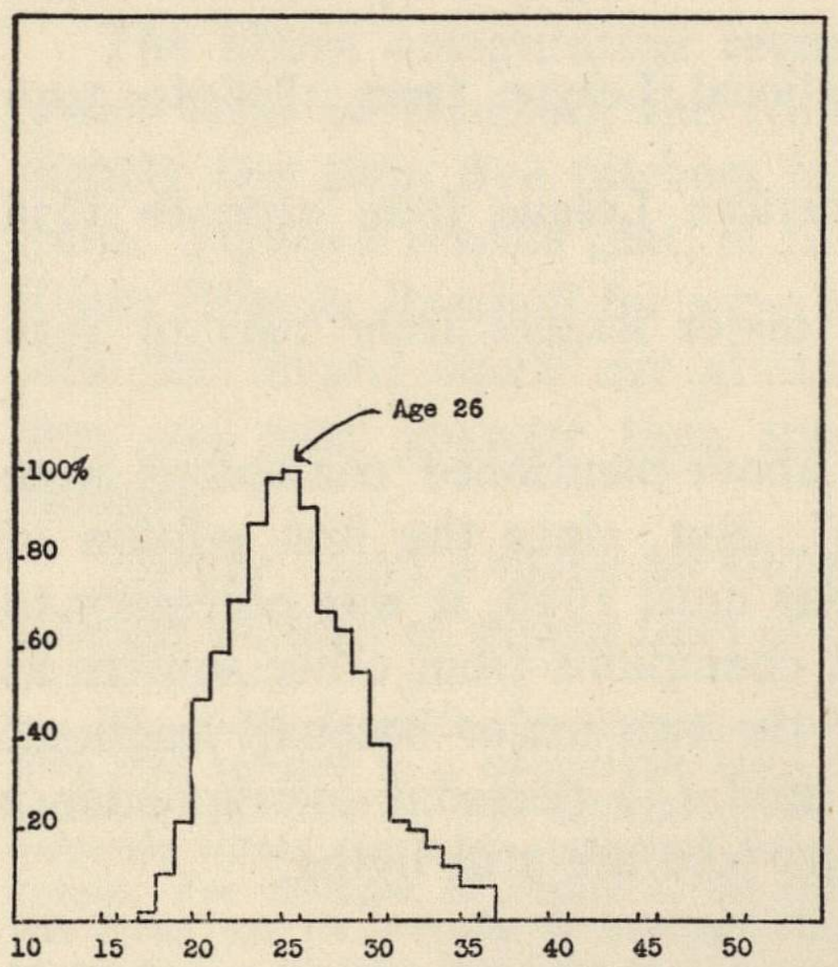

FIGURE 3. Chronological ages at which 133 boxers won or retained 448 world championship titles—all weight classifications.

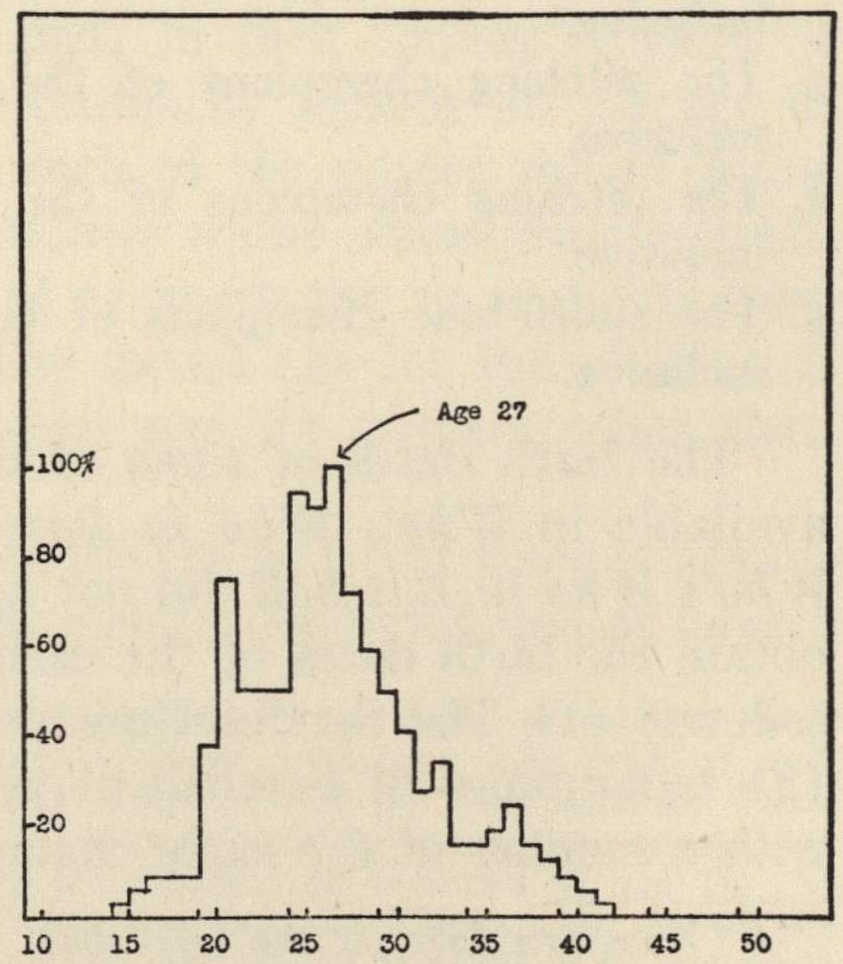

FIGURE 4. Chronological ages at which 317 national tennis championships (English, American, and French) were either first won or retained.

Therefore, in some instances, younger boxers are able to supplant their older rivals, not because of superior boxing ability, but because the titleholder is no longer able to meet the weight requirement. This situation may account in part for the fact that the pugilists in the heavier weight classifications are found to be slightly older than are the boxers in the lighter weight classifications. For the heavyweight championships, the mean chronological age was 29.79; for the bantamweight championship, the mean was 24.83 years.

AMATEUR TENNIS PLAYERS

Figure 4 presents the chronological ages at which 317 national amateur tennis championships were either won or retained in France, England, and the United States.* The 317 tennis championships include outdoor and indoor, singles and doubles. The year of maximum success at tennis was age 27. The irregularity in the appearance of the age curve at ages 21 to 24 is probably due to chance factors. The writer can think of no logical reason why a spurt should occur at age 21 with a decline of ability from ages 22 to 24 inclusive.

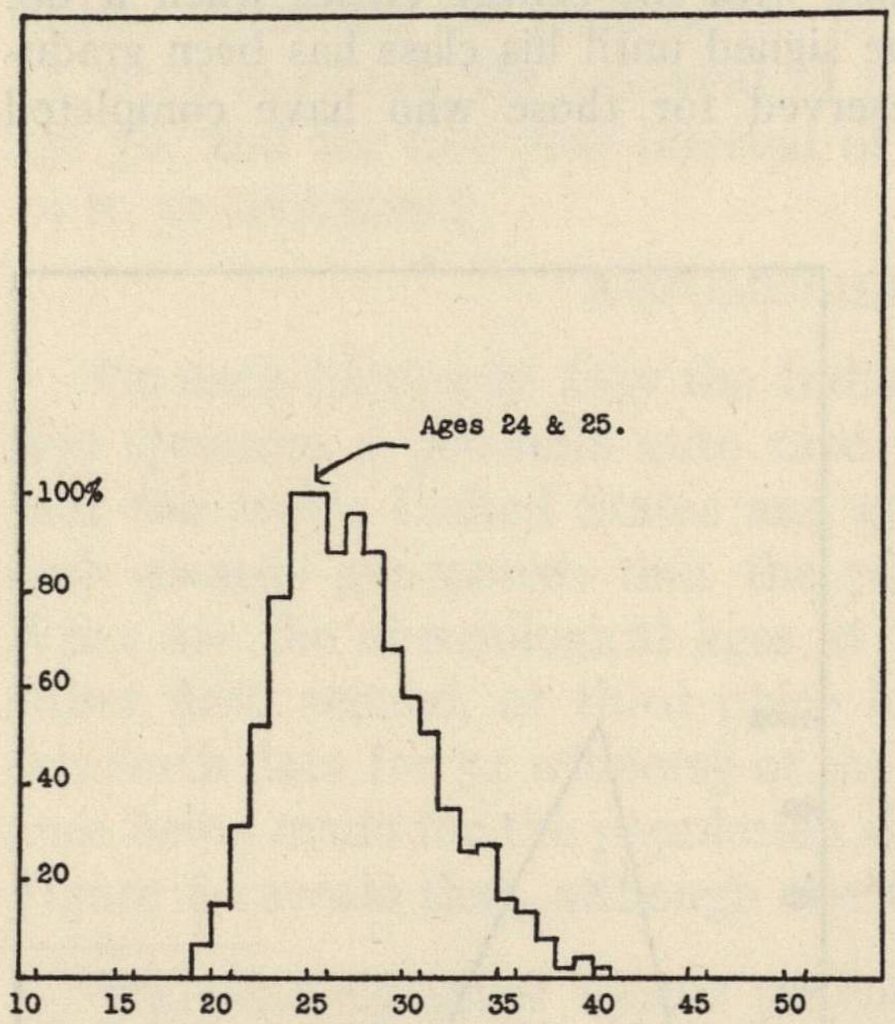

FIGURE 5. Chronological ages of professional ice hockey players. A 5-year cross-sectional study involving 823 player-years.

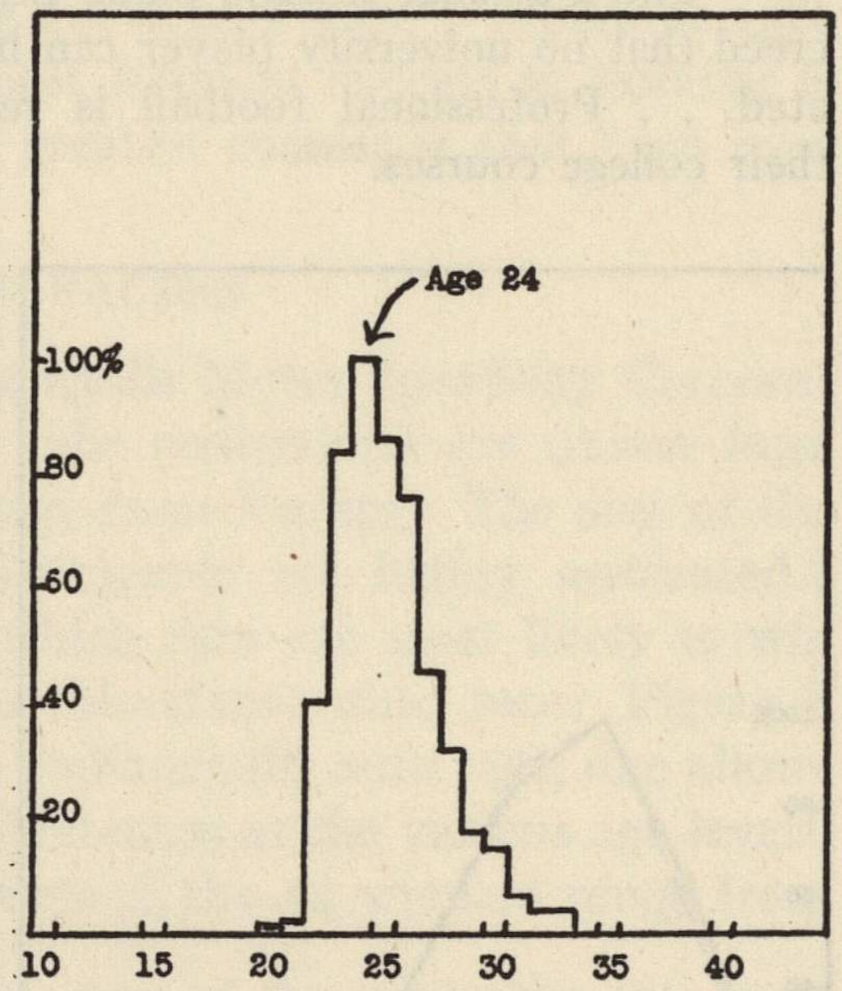

FIGURE 6. Chronological ages of professional football players. A 2-year cross-sectional study involving 485 player-years.

PROFESSIONAL ICE HOCKEY PLAYERS

For studying the ages of professional ice hockey players, the writer tabulated the ages of the players whose names appeared in five annual

*The birth dates of the United States tennis players were supplied by Mr. Edward B. Moss, Executive Secretary of the United States Tennis Association. Birth dates of the French champions were obtained from Mr. P. Gillou, Federation Francaise de Lawn Tennis. The birth dates of the English champions were supplied by Mr. H. A. Sabelli, The Lawn Tennis Association, London, England.

editions of the *National Hockey Guide.*[5] The players whose names are listed during a given year in the "Who's Who" roster of the *National Hockey Guide* are probably the most skillful hockey players on the North American continent.

Figure 5 sets forth cross-sectional data for a five-year period, the total number of player-years being 823. Ice hockey players are most frequently at their best from ages 24 to 25, and the most successful five-year interval is that from ages 24 to 28 inclusive. It should be understood of course that this statement applies to the hockey players as a group. It does not apply to every individual player.

PROFESSIONAL FOOTBALL

Figure 6 presents the ages of professional football players. The names of the players and their chronological ages were obtained from *Who's Who in Major League Football.*[6] Figure 6 reveals that professional football players are rarely less than 22 years of age, a finding which is explained by the following quotation:

> "The National League made peace with the college critics when it decreed that no university player can be signed until his class has been graduated. . . Professional football is reserved for those who have completed their college courses." [6a]

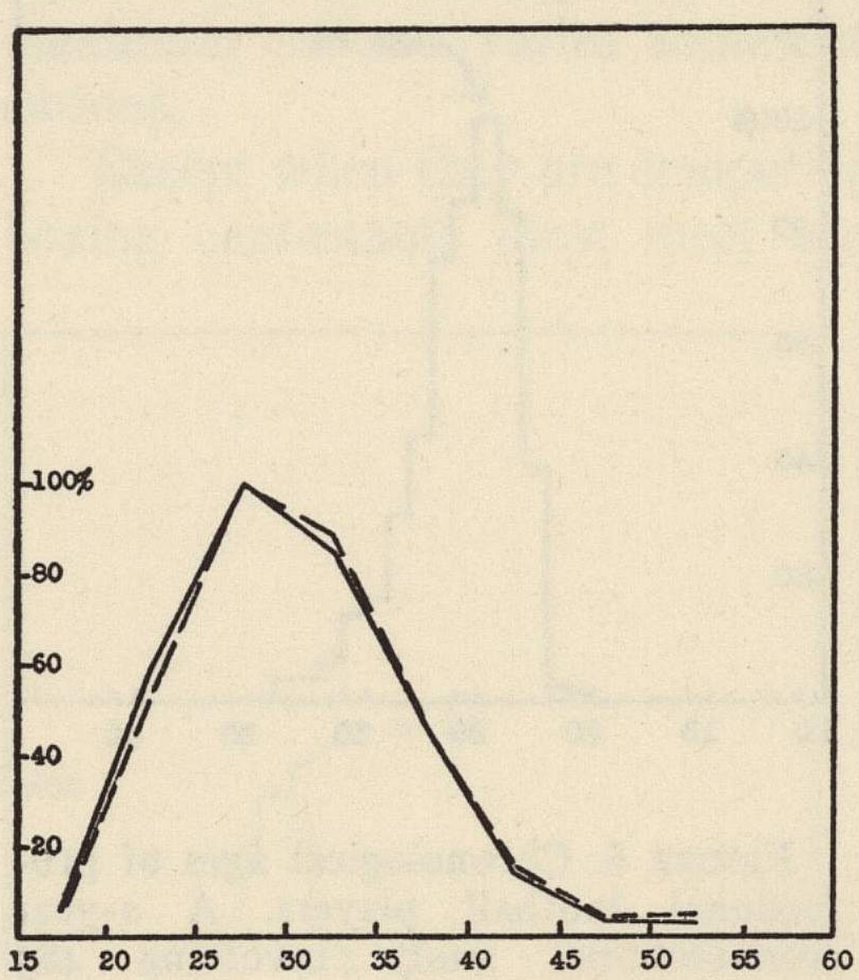

FIGURE 7. Chronological ages at which 87 state corn-husking championships were won or retained. The broken line makes allowances for the population differences at the various age levels.

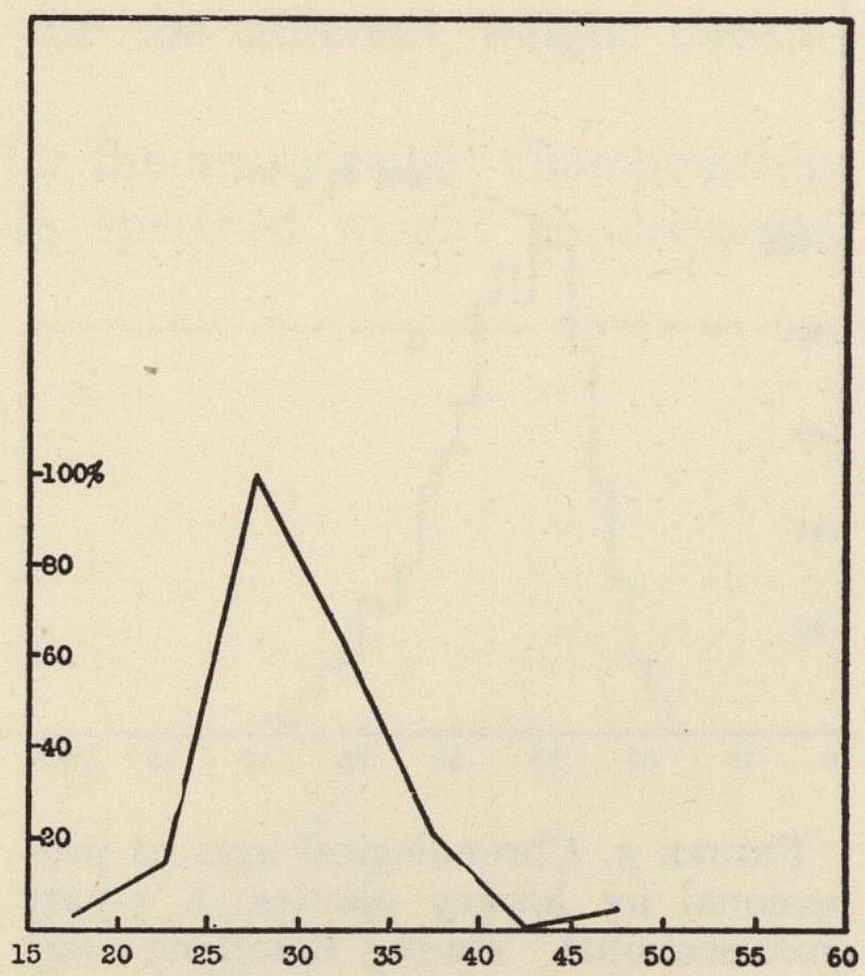

FIGURE 8. Chronological ages at which drivers won either first, second, or third place in the Indianapolis Speedway Races.

Because of the selective factor that is mentioned in the above quotation, we can say only that the modal age for football proficiency probably occurs *not later* than that which is set forth in Figure 6,

namely, age 24. It is of course possible that, if the professional football managers recruited players indiscriminately from all age groups, the modal year might fall at a younger age level.

CORN HUSKERS

In Figure 7 the solid line presents the chronological ages at which 87 state corn-husking championships were won. This solid line makes no allowance for population differences at the various age levels. In this figure the broken line makes allowance for the population differences at the various age levels. Figure 7 reveals that, when allowance is made for the differences in total male population at the various age levels, the shape of the age curve is changed only very slightly. This latter statement is applicable also to most of the other age curves that are presented herein.

It should perhaps be explained that all of the data regarding the corn-husking championships were supplied by the editors of the farm papers which sponsor the state husking contests.* At the present time (1938) these state contests are being held in no less than nine different states. Although the peak of the age curve in Figure 7 occurs at ages 25 to 29 inclusive, the one year of most frequent success at husking is age 30, and the five-year interval of greatest success is that from ages 26 to 30 inclusive.†

AUTOMOBILE RACERS

On each Memorial Day the Indianapolis Motor Speedway Corporation sponsors a 500-mile auto race. The contestants are drawn from over the entire United States and even from Europe. The size of the cash awards guarantees that the participants are highly motivated.‡ What are the chronological ages at which men are most likely to win either first, second, or third place in this classic auto race? Figure 8 sets forth data for 54 winners§ of the Indianapolis auto race, due allowance being made for the population differences at the various age levels. Figure 8 reveals that, although the ages of the 54 winners range from

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*The following editors supplied the birth dates of the corn-husking champions: (1) Indiana and Illinois, Mr. M. C. Gregory, Ass't. Editor of the *Prairie Farmer;* (2) Kansas, Mr. Tudor Charles, Asso. Editor of the *Kansas Farmer;* (3) Nebraska, Mr. Henry W. Biedermann, Asso. Editor of *The Nebraska Farmer;* (4) Ohio and Iowa, Mr. E. W. McMunn, Ass't. Editor of *The Ohio Farmer.* (5) The names and addresses of the Minnesota and the South Dakota champions were supplied by Mr. Berry Akers, Editor of *The Farmer* (St. Paul). The birth dates of these latter husking champions were obtained by personal correspondence.

† To date 13 national championships have been won—not enough for the construction of an age curve. However, it is of interest that 10 of the 13 national husking championships were won at ages 26 to 32 inclusive.

‡ According to daily press reports, first place in the Indianapolis race was worth approximately $35,000.00 to the winner of the 1937 contest. The second prize amounted to $10,000.00; third prize was $5,000.00; fourth prize was $3,500.00; and fifth prize was $3,000.00.

§ For the birth dates of the automobile racers the writer is indebted to:—(1) Mr. T. E. Allen, Sec. of the Contest Board of the American Automobile Association, (2) Mr. T. E. Myers, of the Indianapolis Motor Speedway Corporation, and (3) Mr. S. C. H. Davis, Sports Editor of *The Autocar.*

19 to 45, the winners of the 500-mile race are most frequently from ages 25 to 29 inclusive.

Since the year 1911 the American Automobile Association, governing body of all sanctioned races in the United States, has used a point system for ascertaining the national driving champion for each season.[2] Points are awarded for the position in which each man places in the different speedway races of the year, and the national champion is thus determined. Analysis of the data reveals that, of the 23 National Auto Champions that have been selected to date, fifteen (65 per cent) were from ages 27 to 30 inclusive at the time they won national honors.

BOWLERS

In Figure 9 the solid line sets forth data for 238 bowling championships, including individual events, two-man events, five-man events, and all-events.* Since some of the bowlers won more than one kind of bowling honor, the number 238 should not be taken to imply that data are presented in Figure 9 for 238 different individuals. The dash line in Figure 9 reveals the chronological ages at which 58 individual events, and all-events were won.†

It will be noted in Figure 9 that the solid line is relatively flat at the top, whereas the dash line is much narrower. This difference in the shapes of these two curves illustrates a significant fact, namely, that the shape of a performance age curve is a function not only of type of behavior; it varies also with the excellence of the performance. For example, in Figure 9, the dash line presents data for the best individual performance. The solid line, on the other hand, presents data for both individual performance and team performance. In assembling a bowling team, it is usually necessary to include as team members individuals who are not equal in skill to the best performer on the team. It seems obvious that the best individual performers are likely to demonstrate their full merit only when they perform singly. If the foregoing hypothesis be valid, the dash line in Figure 9 reveals that the most skillful individual performance in bowling is likely to occur at ages 30 to 34 inclusive. For team performance, that does not usually reach such a high standard of excellence as does the most outstanding individual performance, the peak of the age curve is less clear-cut. In other words, team success at bowling seems to be attained over a wider age range than does individual success.

RIFLE AND PISTOL SHOOTERS

The Executive Vice-President of the National Rifle and Pistol Association assembled and forwarded complete information, including the birth dates, of 307 marksmen who, collectively, had won 630 local,

* For data regarding the bowlers, the writer is indebted to Mr. E. H. Baumgarten, Secretary of the American Bowling Congress.

† In Figure 9 both age curves make allowance for population differences at the various age levels.

state, regional, national, and world championships.* With the foregoing data numerous age curves were constructed but in this brief article it will be possible to present only a summary of the findings. In Figure 10 the solid line presents the combined data for the 630 rifle and pistol championships. When the data for the rifle and for the pistol shooters were plotted separately, the peaks of both of the age curves were found to occur at ages 25 to 29 inclusive.

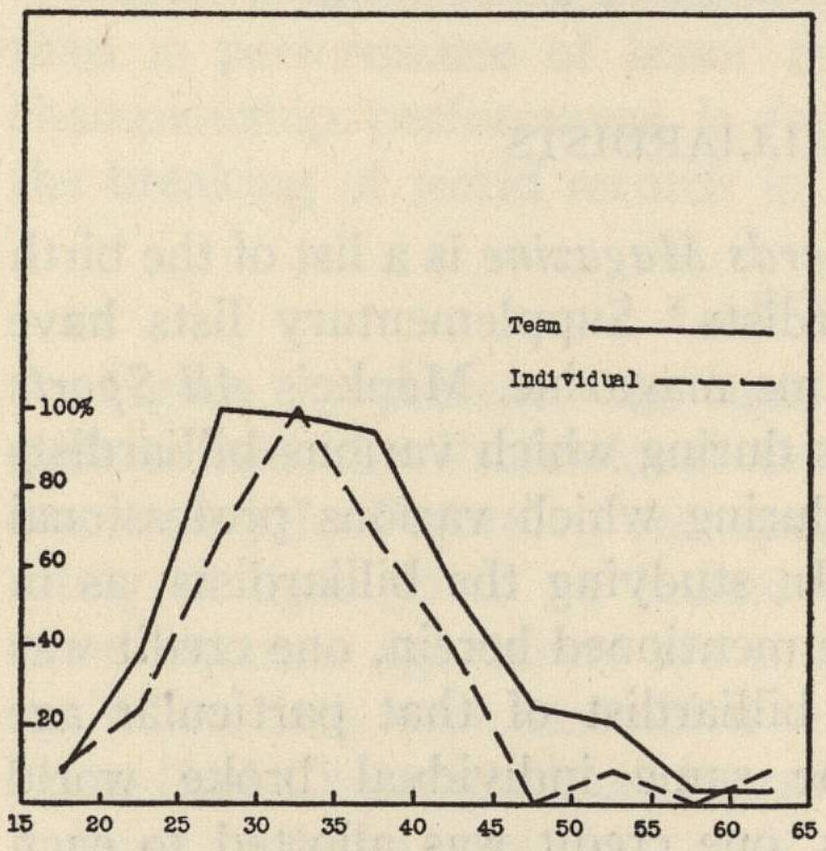

FIGURE 9. Chronological ages at which American Bowling Congress Championships were won or retained. A, team performance; B, individual performance.

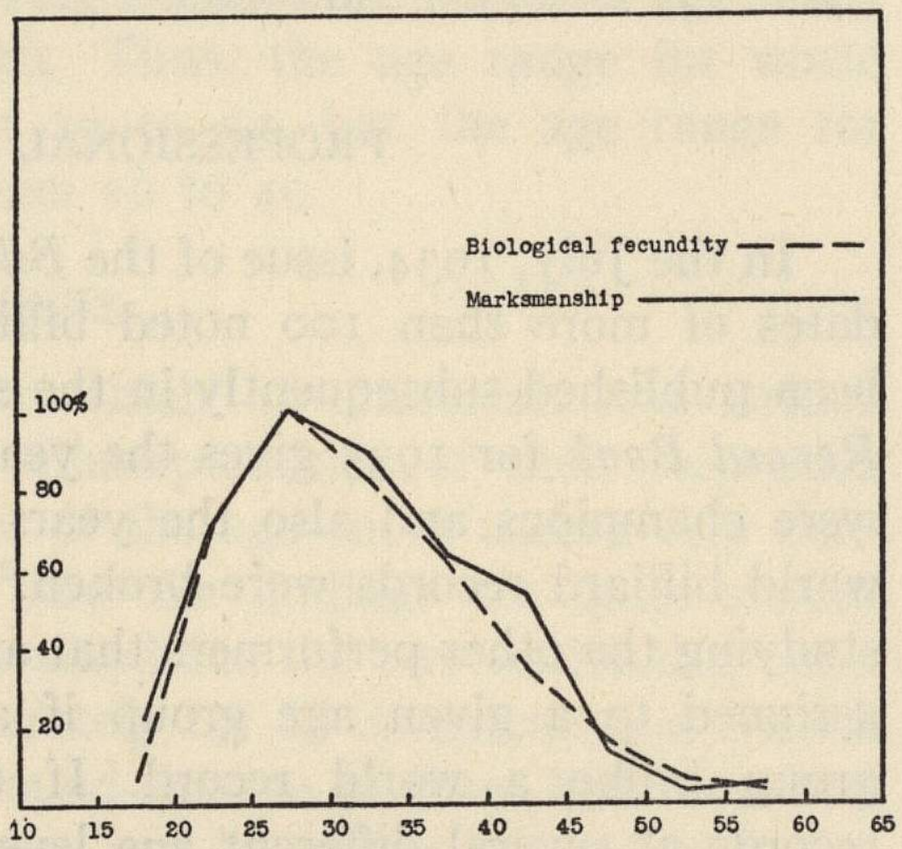

FIGURE 10. A, chronological ages at which 630 rifle and pistol championships were won; B, ages of fathers of children born in the United States in the year 1931.

The dash line in Figure 10 presents information regarding biological fecundity. This dash line, which reveals the number of men who become fathers at successive age levels, is based upon more than 2,000,000 births which occurred during the year 1931.[7] Since similar age curves were found when data for fecundity were plotted separately for several different years, it seems safe to assume that the dash line in Figure 10 is a trustworthy portrayal of the facts regarding man's biological fecundity at various age levels. It will be noted that there is much similarity between the two curves of Figure 10.† It is because of this marked similarity that these two age curves are superimposed in Figure 10.

DUCK PIN BOWLERS

Figure 11 presents data for Duck Pin Bowlers.‡ In this figure the solid line presents data for men only, e.g., for 91 National Duck Pin

* Data regarding the rifle and pistol shooters were supplied by Col. M. A. Reckord. Thanks are expressed herewith for this wholehearted cooperation.

† In Figure 10 neither of the age curves makes any allowance for the fact that there are more young men than older men. When such allowance is made, however, the two age curves exhibit about the same degree of similarity.

‡ For the data regarding the Duck Pin Bowling champions, the writer is indebted to Mr. G. L. Isemann, Secretary of the National Duck Pin Bowling Congress.

Bowling Congress champions. The dash line in Figure 11 sets forth analogous data for 90 women champions. The women's age curve rises and descends five years earlier than does the curve for the men. The peak for the men's curve occurs at ages 30 to 34 inclusive, the apogee for the women's curve occurs at ages 25 to 29 inclusive. Of interest in this connection is the fact that, when a fecundity age curve was plotted for women, its highest point occurred five years earlier than did the highest point of the age curve for male fecundity (see Figure 10).

PROFESSIONAL BILLIARDISTS

In the July, 1934, issue of the *Billiards Magazine* is a list of the birth dates of more than 100 noted billiardists.[8] Supplementary lists have been published subsequently in the same magazine. Menke's *All Sports Record Book* for 1935 gives the years during which various billiardists were champions and also the years during which various professional world billiard records were broken.[2] In studying the billiardists, as in studying the other performers that are mentioned herein, one credit was assigned to a given age group if a billiardist of that particular age group broke a world record. If the same individual broke world records at several different age levels, one credit was allotted to each appropriate group. If a given player broke three world records during a single year, three credits were allotted to his age group.

In Figure 12 the dash line reveals the chronological ages at which

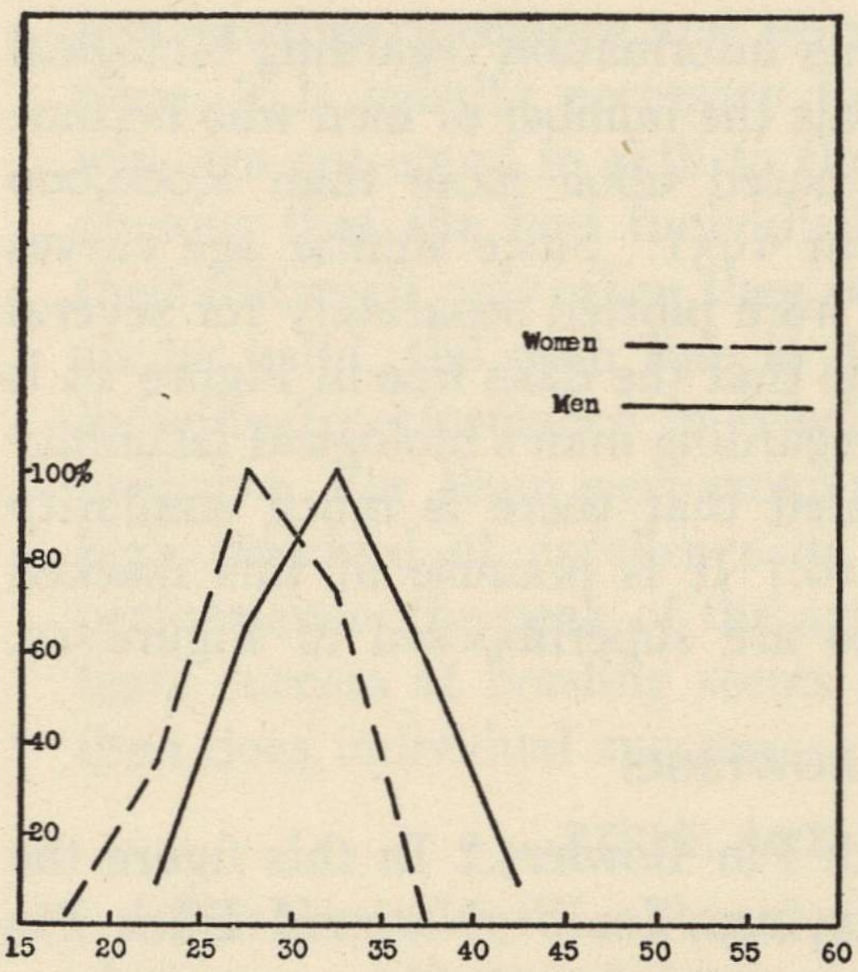

FIGURE 11. Ages at which National Duck Pin Bowling Championships were won or retained. A, women bowlers; B, men bowlers.

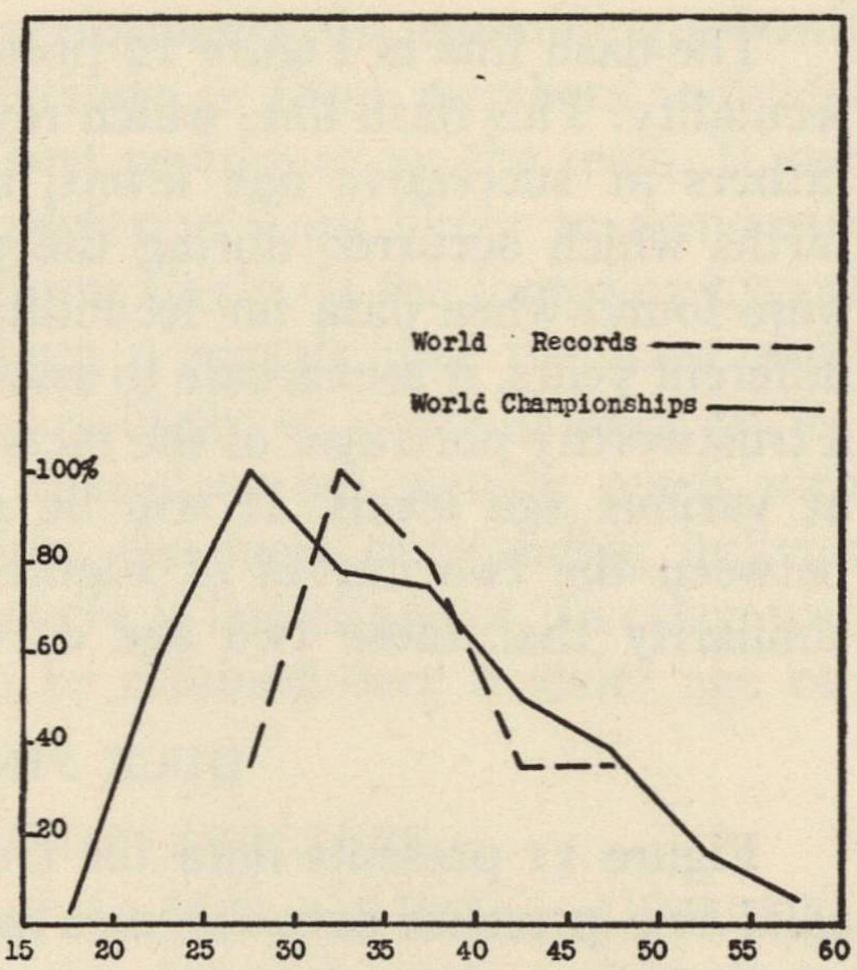

FIGURE 12. A, chronological ages at which 136 professional world championships at billiards were won or retained; B, ages at which 42 world records were established.

42 professional world billiard records were broken. The solid line of Figure 12 reveals the ages at which 136 professional world championships were either won or retained.* Figure 12 suggests that professional world billiard championships are most likely to be won or retained by players of ages 25 to 29 inclusive, and that world records at billiards are most likely to be broken by players when they are from ages 30 to 34 inclusive. Figure 12 suggests once again that the very best performance is likely to be attained during a somewhat narrower age range than is performance of lesser merit. Thus, the age range for world championship performance is from 19 to 55, but the age range for the breaking of world records is from 26 to 49.

GOLFERS

Figure 13 presents the ages at which 48 American and British golfers held the Professional Golf Championships of their respective countries.† In Figure 13 the apogee of the age curve occurs very definitely at ages 30 to 34 inclusive, and the findings are quite similar when separate age curves are constructed for the two national groups.

When data were assembled separately for 88 American and British Open Golf Championships, it was found that 24 of them had been won at ages 25 to 29, and that 23 of them had been won at ages 30 to 34. Thus, 47 of the Open Golf Championships of England and of America (53 per cent) were won during the ten-year interval 25 to 34 inclusive. Since the difference between the 25 to 29 and the 30 to 34 age groups amounts to only one championship out of 88, it will perhaps be best to postpone decision regarding the five-year interval of greatest success at winning Open Golf Championships. However, detailed analysis of the data for amateur golfers reveals that the national amateur golf championships (both the British and the American) have been won most often by individuals who were from ages 25 to 29 inclusive.

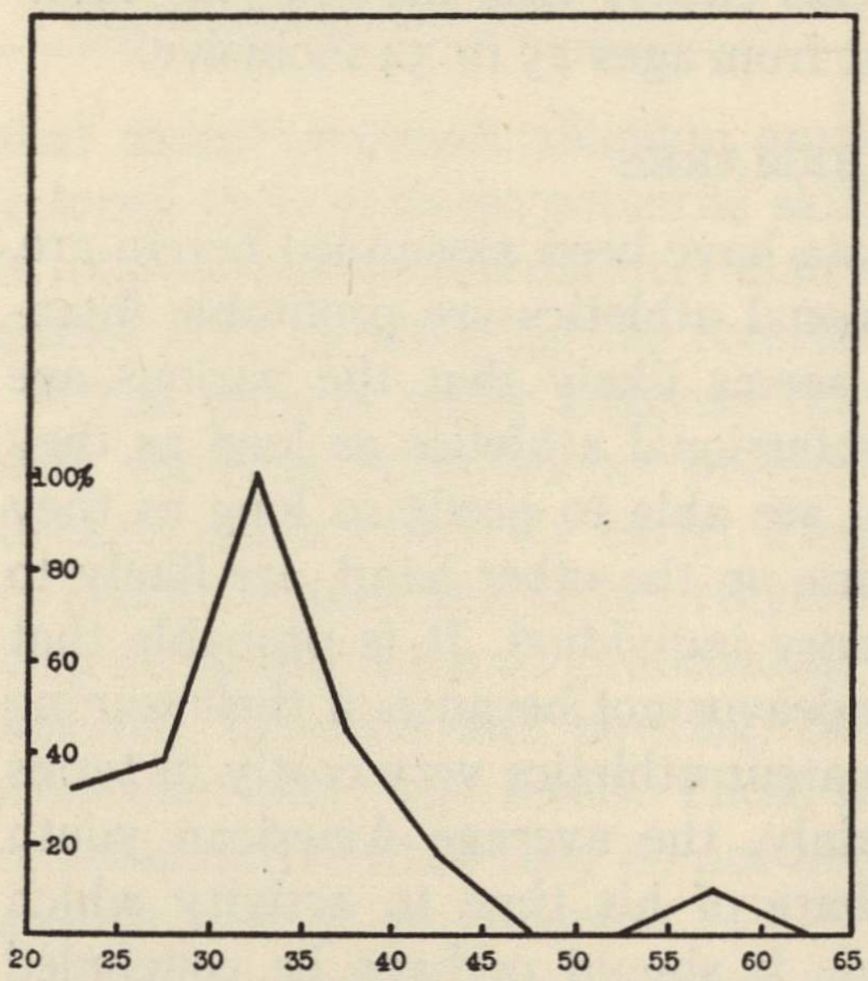

FIGURE 13. Chronological ages at which 48 American and Britishers became professional golf champions of their respective countries.

Some readers may wonder why

*In Figure 12, and in Figure 13, no correction was made for population differences at successive age levels because census data for the various countries of the world were not easily available to the writer.

† Data regarding the birth dates of the golfers were supplied by Mr. R. W. Treacy, former Secretary of the Professional Golfers' Association of America, and by Mr. R. C. T. Roe, Secretary of the Professional Golfers' Association [of England]. Supplementary information was obtained also from the *Tournament and Player Record Book* for 1935. Chicago: Published by the Professional Golfers' Association of America.

the writer has not combined the data for amateur, for open, and for professional golf champions. There is a valid reason for not doing this. In the first place, the National Amateur Championship is probably the easiest to win. The basis for this assertion is the well known fact that when the National Open Golf tournaments are held, only a very few amateurs are to be found among the leading contestants. This seems to afford sufficient reason for treating the amateur championships separately. Secondly, correspondence with an eminent golfer elicited the following statement regarding the Open and the Professional Championships:

> It is generally conceded that the annual championship of the P.G.A. is the hardest to win. This is because the winner must maintain a top form for six days. Thirty-six holes a day for six days is more of a physical grind than three days at 18–18–36, as is the case in the Open. From the psychological standpoint the Open undoubtedly is harder on the nerves for the reason that there is more of a publicity build-up, the pace is always fast, and every player knows that one or two missed shots may end in disaster—more so than in the match play P.G.A. even.

Whether or not the foregoing analysis is wholly valid, since the Open and the Professional tournaments are not the same kind of contest, no mistake will be made if the data for them are treated separately. Such separate treatment reveals clearly that the ten-year interval of greatest golf proficiency is that from ages 25 to 34 inclusive.

FURTHER REMARKS

Most of the athletes for whom data have been assembled herein are, or were, professionals. Since professional athletics are profitable financially to successful participants, it seems likely that the various age groups continue to participate in professional athletics as long as they are able to profit thereby. And they are able to profit so long as they retain unusual skill. Amateur athletics, on the other hand, are likely to be an expensive luxury to the ordinary individual. It is probable that many individuals forsake amateur endeavor not because of their waning proficiency but because they find amateur athletics very costly in terms of time, energy, and money. Certainly, the average American youth cannot afford to devote a major share of his time to activity which yields no financial return. Therefore, it should perhaps be concluded

---

* This hypothesis may explain in part why the amateur golf champions are younger than the professional golf champions. The present writer has found also that amateur boxers and amateur baseball players (Olympic entrants) are younger than are professionals who participate in the same types of activities. The foregoing hypothesis also provides an explanation for the curious shape of Figure 4 which sets forth data for amateur tennis championships. Professional tennis is of such recent origin that data for the construction of an age curve are not yet available. Nevertheless, it seems safe to predict that, when sufficient data can be assembled to permit the construction of a curve showing the ages at which a large number of professional tennis championships have been won, the latter curve will exhibit a gradual annual rise and an equally gradual decline. It is probable that the age curve for professional tennis championships will bear a closer resemblance to Figure 1 (see page 5) than to Figure 4 (see page 8).

TABLE I

SUMMARY OF FINDINGS WITH REFERENCE TO PROFICIENCY AT SPORTS AND GAMES

Types of Activity	No. of Cases	Mean Age	Standard Deviation	Yrs. of Maximum Proficiency
Professional baseball (not inc. pitching)	3,126	29.07	4.04	28
Professional baseball (pitching)	1,666	29.50	4.39	27
Major league batting championships..	96	29.16	3.46	26–29
Major league pitching championships..	88	28.18	3.72	26–31
Major league stolen-base championships	63	27.96	3.46	25–29
Professional boxers	448	26.98	3.98	25–26
Tennis champions (French, English and American)	317	27.63	5.25	25–27
Professional ice hockey players	823	27.56	4.00	24–25
Professional football players	485	25.72	2.33	24
Corn-husking champions	87	30.39	6.20	26–30
Automobile racers	54	28.81	4.50	27–30
Bowling champions (individual performance)	58	32.78	7.56	30–34
Bowling champions (team performance)	238	33.38	7.83	27–37
Rifle and pistol shooters	630	32.05	8.13	27
Duck pin bowlers (men)	91	32.19	4.36	30–34
Duck pin bowlers (women)	90	28.13	3.47	25–29
Billiards (world record breakers)	42	35.67	5.83	30–34
Billiards (world championship winners)	136	34.35	8.75	25–29
Golf (professional championships—English and American)	48	32.33	6.49	30–34
Golf (open championships—English and American)	88	31.01	6.37	25–34
Golf (amateur championships—English and American)	74	29.88	7.66	25–29

that many amateurs abandon amateur athletics before they have developed their greatest potential skill.* If this latter hypothesis is valid, it follows that we can discover man's potentially best years at sports and games only by studying the records of professional athletes.

The present study suggests that man's proficiency at such violent and vigorous activities as professional football and professional ice hockey wanes relatively early. These two activities require the players to make frequent and rather reckless bodily contacts. Activities of a less violent nature, such as professional golf, rifle and pistol shooting, corn husking, billiards, and bowling, can be participated in successfully at somewhat older age levels. These latter activities may be described as non-combative since they do not necessitate the pitting of one's strength against that of an opponent.

The foregoing data suggest also that, for certain measurable behaviors, the shape of the performance age curve varies both with the type of function that is measured and also with the excellence of the performance. Thus, if age curves are constructed for baseball performance of sand-lot quality, such curves would doubtless be flatter and broader than are the curves that are set forth in Figures 1 and 2. Both small boys and middle-aged men can participate successfully in sand-lot baseball. But when data for only major league performance are utilized, the baseball curves reveal relatively narrow

TABLE II

NUMBER OF OUTSTANDING PERFORMANCES PER FIVE-YEAR INTERVAL

Type of Activity	Age Interval										
	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69
Prof. baseball (not inc. pitching)	12	476	1,443	944	226	25					
Prof. baseball (pitching)	8	216	763	501	137	37					
Major league batting championships		9	51	31	5						
Major league pitching championships	1	17	41	26	3						
Major league stolen-base championships		13	33	16	1						
Professional boxers	6	142	208	75	14	3					
Tennis champions (Fr. Eng. and Amer.)	12	84	133	54	28	6					
Prof. ice hockey players	6	235	375	167	37	3					
Prof. football players		214	242	29							
Corn-husking champions	2	16	27	23	13	4	1	1			
Automobile racers	1	4	26	15	7		1				
Bowling champions (Ind. perf.).	2	5	13	18	12	6		1		1	
Bowling champions (Team perf.)	5	24	60	54	50	25	10	7	1	1	
Rifle and pistol shooters	33	95	153	137	97	82	20	5	7	1	
Duck pin bowlers (men)		4	25	37	22	3					
Duck pin bowlers (women).....	1	17	43	29							
Billiards (world records)			5	15	12	5	5				
Billiards (world championships).	1	19	32	25	24	16	12	5	1		
Prof. golf (Eng. and American).		7	8	20	9	3			1		
Open golf (Eng. and American).	1	16	24	23	15	8	1				
Amateur golf (Eng. and American)	1	21	24	14	4	7	2		1		

peaks. Very superior baseball performance is thus exhibited over a narrower age range than is performance of lesser merit. And this latter statement seems to hold also for a number of other behaviors—for musical composition, for literary endeavor, and for certain kinds of scientific achievement.[1]

For several types of skill that have been cited in this article it has been possible to ascertain the one year (or age level) during which men are most likely to exhibit their best performance. For several other kinds of endeavor, it has been possible to determine only the three-, the four-, or the five-year interval during which championship skill is most likely to be displayed. For golf we have had to content ourselves (for the present) with a ten-year interval.* Some may wonder whether for most (or possibly all) activities of the kind that have been discussed in this article, there does not exist *one* year (or age level) during which groups of individuals will be most likely to exhibit their very best ability. The assembled data suggest, but they do not validate, this hypothesis. These data do demonstrate that, given sufficient time and coöperation, it will be possible to determine whether or not the fore-

*Data were assembled separately for 415 golfers who won either first or second place in amateur, professional, and open contests. The five-year interval of maximum proficiency was ages 24 to 28 inclusive. But, as has already been indicated, the ages of maximum proficiency vary with the type of golfing contest that is under consideration.

going hypothesis is a valid one. And, if valid, it will be possible to determine, for groups of individuals, which particular chronological age level, or fraction thereof, is most propitious both for the specific types of behavior that have been mentioned herein and for many others as well.

It seems obvious that, in much of the unorganized competition that is constantly taking place between the various age groups, some of the age groups are greatly handicapped, others of them are slightly handicapped, and some, perhaps only one, at any rate not more than a very few, possess a distinct advantage. And the keener the competition, the more valid, within limits, the foregoing statements. It seems likely that future generations of psychologists may be able to express these facts with mathematical precision. Indeed, it should be possible to construct, for each specific type of measurable behavior, of a given standard of excellence, something analogous to the mortality tables that have long been utilized by life insurance companies. Like the mortality tables, the probability tables that are here suggested would apply only to groups of individuals of a given chronological age. Such tables obviously would not apply to every individual within a given age group.

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August 11, 1939.

Mr. Charles Linden,
1329 Vermont Street,
Lawrence, Kansas.

Dear Charlie:

We find that our budget for Physical Education is exhausted and it will be necessary that we lay you off at the close of this week, ending Saturday, because the state does not permit us to spend money we do not have.

I trust that you have been able to lay away the most of your salary so that you will be in a good position to come back in the fall. You have been a good worker and a very faithful employee. We will be planning on work for you this fall.

With all good wishes and trusting that it will be possible for you to obtain at least part-time employment somewhere until school begins, I am

Very sincerely yours,

Director of Physical Education and Recreation,
Varsity Basketball Coach.

FCA:AH

C

February 8, 1939.

Mr. Art Lynn,
1221 N. Independence,
Oklahoma City, Okla.

Dear Mr. Lynn:

I feel that I have been misquoted in my remark that a good college basketball team could beat any good AAU team in the country. I did say this - that the best pick of the college basketball personnel formed into a team would stand at least an even chance with any AAU team under organization.

You can see why that would not be possible for a good college team, wherein the boys are forced to make their grades and are there for other things than basketball, while about the only consideration for an AAU independent or semi-professional outfit is that they be good basketball players, and if they don't attend to their workaday job, very well. It makes little difference with most independent managers supporting AAU teams. You can see that the AAU, "Amateur Athletic Union", is a misnomer, as there are no strictly amateurs on the AAU teams. They are professionals or semi-professionals.

But the reason why I contend that the best pick of the college group could whip the best pick of the AAU group is on account of condition, morale, and esprit de corps, or spirit to win, on the part of the college group. I have seen so much independent basketball that there is very little of the altruistic side protruding. They are like a bunch of professional baseball players who want their base hits, batting averages and field averages, because that determines whether they will stick or not.

My statement was in regard to assembling the best pick of the college teams and playing them against the best pick of the AAU. You can see from this angle what I meant.

Thank you for your kind words regarding my son's playing in Oklahoma City the other night.

I generally endeavor to discourage a boy from playing too much independent basketball after he has finished college. After a boy goes to college four years and obtains a fine background of educational knowledge, then my notion is that

he had better jump in with both feet and make the best of it while it is still fresh in his mind and while he has the ambition, and endeavor to put everything in practice that he has learned in his theory classes in the University. It is time to quit playing just for fun unless he wants to make a business or a profession of it. The game is not worth a candle from a business or professional standpoint.

I trust that you see my point. I am glad that you have written me and I trust that I have made myself clear.

With all good wishes, I am

Very sincerely yours,

Director of Physical Education,
Varsity Basketball Coach.

FCA:AH

COPY

Feb. 6, 1939

Okla. City, Okla.

Dr. Forrest C. Allen
University of Kansas
Lawrence, Kansas

Dear Sir:

Your remark that a good college basketball team could beat any A.A.U. team has caused considerable controversy in Oklahoma. It has been my opportunity to see the Oklahoma City Parks' Team of the Missouri Valley A.A.U. League soundly beat two good college teams with such ease that, should they have wanted to, they could have trebled the score. They trounced Central Missouri State Teachers College of Warrensburg, Missouri, winner of the All-College Tournament held in Oklahoma City, by the score of 48 to 14. They beat the tall Arkansas University team by 66 to 28.

Now, these two teams can not be regarded as pushovers by anyone as Warrensburg has one of its many annually good teams and Arkansas twice beat Oklahoma University, whom you pick to win the Big 6 Conference title. Do you still think a good college basket ball team can beat one of these A.A.U. League Teams? I would be interested in knowing. Should you care to reply to this letter you may address it,

Art Lynn
1221 N. Independence
Okla. City, Okla.

P.S. Congratulations on your son's fine showing in his Great Bend, Kansas teams' defeat by the Parks Team by the score of 92 to 32. His 10 points and good floorwork were the outstanding efforts of his team.

The K.U. NEWS BUREAU
W. A. DILL, Director
UNIVERSITY OF KANSAS, LAWRENCE

A

Copy to Allen

October 27, 1938.

Editor, Liberty Magazine,
New York, N. Y.

Dear Sir,

The article, "It's Basketball Now---The Game that Has Everything" in the November 5 Liberty is most interesting and illuminating, and in the main, I believe, accurate. I would like, however, to call attention to a few glaring errors. Dr. James (no middle initial) Naismith, and Dr. Forrest C. "Phog" Allen, and John Bunn, now at Stanford, all are connected with basketball at the University of Kansas, not at Nebraska. Dr. Naismith, called "Doc" by his friends here, rather than "Pop" as your writer nicnamed him, has been on the University of Kansas staff for 40 years, and the game has been played that long at this institution. Dr. Allen, as student and coach, has been at the University of Kansas more than 20 years.

The original rules numbered 13, not 1 as your article indicates. I have seen the original rules that were posted, but the page has disappeared from Dr. Naismith's files. The present rules may number 113, but there are numerous sections to some of them, many subpoints a, b, and c, and an occasional "interpretation."

The printer must have confused the formation of the rules body with Ned Irish's invasion of Madison Square Garden, for there have been books of rules long before 1934. In fact the National Association of Basketball Coaches, of which Dr. Allen was one of the organizers and first president, was formed at least eight years before that.

John Bunn's "jumpless" game is not entirely jumpless, for held balls are still put in play by being jumped for, and this, Dr. Allen points out, is more unjust than the center jump after scores, for both teams usually arranged for their tallest men for this jump, whereas a held ball may bring together players of distinctly different size. Dr. Naismith insists that the present rule, giving the ball to the team scored on, and under the basket, really slows the game, or at least makes delay possible. Under the old rules time was "out" after a score until the ball was tossed again at center---if timers didn't stop their clocks they were not following the rules. Now the ball goes into play out of bounds, and the player has five seconds to start, and another ten seconds before he has to be into the forward court. A rapid-fire type of play, which could have been used under the old rules, has come into fashion in recent years and has apparently speeded the game.

The University of Kansas has been playing conference basketball for 30 years, starting in 1908. In that time, Kansas has won the undisputed championship of the conference 17 times, and tied for championship three more. Fifteen of these Kansas champions were coached by Dr. Allen, and he coached seven years of conference championships in basketball, plus other sports, at Missouri State Teachers at Warrensburg. Since the retirement of Dr. Meanwell of Wisconsin, he is the dean of basketball coaches.

Yours truly,

Carleton College Basketball Schedule-

Nov.25	Alumni	Home
Dec. 1	Stout	Home
Dec. 3	Iowa	Iowa City,Ia.
Dec. 5	South Dakota State	Home
Dec. 7	Northwestern	Evanston,Ill.
Dec.10	Minnesota	Minneapolis
Dec. 15	North Dakota	Home
Dec.17	South Dakota State	Brookings,S.D.
Dec.20	South Dakota	Vermillion,S.D.
Dec.23	Marquette	Elgin,Ill.
Dec.27	Coe	Marshalltown,Ia.
Dec.28	Grinnell	Marshalltown,Ia.
Jan. 2	Kansas	Lawrence,Kan.
Jan.10	St.Olaf	Home
Jan.13	Ripon	Ripon,Wis.
Jan.14	Lawrence	Appleton,Wis.
Jan.18	Monmouth	Home
Jan.20	Washington	Coliseum,Chicago,Ill.
Feb.11	Knox	Home
Feb.17	Cornell	Mount Vernon,Ia.
Feb.18	Coe	Cedar Rapids,Ia.
Feb.23	St.Olaf	St.Olaf
Feb.25	Beloit	Home

IT'S BASKETBALL NOW—
The Game That Has Everything

READING TIME
10 MINUTES 25 SECONDS

80 million fans can't be wrong on a game that outdraws baseball!

BY YANKEE STADE

BASEBALL is the national game," the baseball fan said. "You can't deny that."

"I do deny it."

Then we were off.

What *is* a national game?

Soccer football is — in more nations than any other game. And cricket is in some. And curling in others. And baseball, according to sports writers, is in ours. But, as Mr. Roosevelt is so fond of saying, they are "thinking in the past."

Don't be misled by the big baseball-attendance figures in less than half a dozen big cities. The rest of the major-league clubs are dying at the turnstiles. Most minor leagues would disband tomorrow if it weren't for financial first aid from the few moneyed majors. College baseball incurs an annual deficit of $250,000. And don't take my word for it.

Ask the man whose business it is to sell bats and balls, mitts and masks. He knows. Ask the baseball magnates themselves.

They are so scared about what is going to happen to them when a generation grows up that knows not baseball that they are resorting to all kinds and methods of artificial respiration intended to pump new life into a dying pastime.

Baseball schools, movies, pep talks, exhibition games in small towns, free admission for school children, radio interviews with stars, subsidies to semi-pro and semi-amateur outfits—all have been tried without any appreciable increase in the number of people who play the game, as distinguished from the big-city crowds that just watch it.

Meanwhile, between now and spring, 80,000,000 Americans will watch 60,000 teams play 1,500,000 games of basketball.

On the attendance side, this is 30,000,000 more than see baseball games, 40,000,000 more than see football games, 50,000,000 more than see horse races or boxing matches.

This in spite of the fact that most basketball games are played in school, college, and Y gyms, where fans have to ease themselves in between the punching bag and the rowing machine and sit on the parallel bars.

In auditoriums where there are seats by the thousand, thousands fill them. In Indiana, where the game is hottest, crowds of 7,500 frequently converge on villages of 750. In New York, where basketball is just getting established, crowds of 15,000 to 18,000 in Madison Square Garden are the rule.

If the time comes when the game is played under floodlights in baseball stadia, the late Abner Doubleday, founder of baseball, will emerge from his dugout and throw away his bat. By the same token, if the game is regularly played in all movie theaters between features—as it already is played in some—show business will enjoy one of its biggest years.

Where basketball has it all over its rival games, however, is in the number of people who play it. Sixty thousand teams are rated good enough to play in public exhibitions. How many more teams there must be that play privately for their own amusement—and how many more unattached individuals who pick up an hour or two at the baskets, just as the golfer or the tennis player picks up a game on the fairways or the courts!

It is safe to say that the number of people who actually play basketball outstrips the number of people who play any other game in America by at least three to one.

Basketball's climb to the popularity tops would seem to be based chiefly on the fun that is inherent in the sport itself. This goes for players and spectators both.

Basketball has everything: the sharp physical contact of football and the prize ring, the mental and manual coordination of baseball, the intricate beauty of ice hockey, and the exciting speed of the horse race.

The last-named quality stands out.

"Heaving Hank" Luisetti, the "Slinging Sammy" Baugh of intercollegiate basketball—who hails from San Francisco—frequently scores a point a minute; in one game he made twenty-four points in eleven minutes. Not much chance for boredom, for players or watchers, in a game that goes as fast as that!

The conclusion is inescapable that more people play basketball, and more people pay to see it played, because they get more enjoyment out of it than they do out of any other athletic pastime. In short, basketball is the American national game.

It is, in fact, *(Continued on third page following)*

PARAMOUNT'S ALL-TECHNICOLOR CAVALCADE OF AVIATION

"MEN WITH WINGS"

FRED MacMURRAY

RAY MILLAND

LOUISE CAMPBELL

Andy Devine · Lynne Overman
Porter Hall · Walter Abel
Kitty Kelly · Virginia Weidler
Donald O'Connor

and a cast of thousands

PRODUCED AND DIRECTED BY
WILLIAM A. WELLMAN
Creator of "Wings"
Screen Play by Robert Carson

A $250,000.00 MOVIE QUIZ CONTEST PICTURE

A PARAMOUNT PICTURE IN TECHNICOLOR

FROM that epic moment when the first of 'em climbed into a cigar box and made the blooming thing fly, until today, when the world is cheering their latest exploits, America's Men With Wings have held the heart of the world in the hollow of their firm young hands. And now, for the first time on any screen, for the first time in glorious Technicolor, Paramount tells their thundering, thrilling story... the whole heroic history of those gentlemen unafraid, America's flyin' fools, tells it through the personal, heart-pounding adventures of two boys and a girl whose romance is as exciting as the throb of a motor against the morning sky, as real as the sob in a girl's throat as she sees her lover wing his reckless way through the clouds.

COMING SOON!

RONALD COLMAN
in the Grand Love Story
FRANK LLOYD'S "IF I WERE KING"

Everyone who has ever been in love, who has ever dreamed of love, will thrill to Frank Lloyd's glorious version of this immortal love story of a poet-rogue who dared to love the most beautiful lady at the French Court, as it is played by Hollywood's most romantic star . . . the dashing Ronald Colman.

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Everyone of the millions who have seen Bob Burns on the screen, who have chuckled at his genial humor on the radio will cheer this glorious opportunity of America's beloved comedian to play a role cut to his own measurements...the character of a roving printer with a heart bigger'n your fist who straightens out all the troubles of an American small town.

ASK YOUR LOCAL THEATRE
when these Paramount Hits Play

(*Continued from third page preceding*) the only major sport which *is* national with us. Baseball stems from cricket and rounders; football, from rugby and soccer; but basketball is thoroughly American.

The game was invented nearly half a century ago by a harassed gym instructor named James A. " Pop " Naismith in Springfield, Massachusetts. Pop had an especially lively group of boys in his gymnasium one year, and was finding it hard to keep their minds on their work and their chins on the bars. So one day, in desperation, he kicked the bottoms out of a couple of peach baskets and stuck them up on facing walls. Then he chose up sides, chucked in a soccer ball, and hoped for the best. The result was basketball.

" I soon found," Pop said the other day—he's seventy-six now and a Professor of Education, " that it filled the same place during the winter season that football and baseball did in the autumn and summer."

Other gym instructors found that out, too. The new game had a mild vogue in the East, mostly in Y's, and gathered strength as it rolled westward. The Springfield start was in 1891. By 1893 the game had a firm foothold in Detroit, with Adams Y and Detroit Athletic Club furnishing the keenest competition.

Pop's game had only one rule: that a player could take only one step with the ball in his hand. The present game has a hundred and thirteen rules. And therein lies the reason why basketball developed so slowly as a national game.

Coaches, teams, players made their own rules. Different systems of play grew up in different localities. The game went into a polyglot era.

The first national regulatory body, the Basketball Rules Committee, came into existence in 1934 and promulgated the national rules which are now universally accepted. Since then the growth of the game has been phenomenal. Last year ninety-six per cent of all schools and colleges were playing basketball, and leagues, both professional and amateur, were operating all over the country.

Recognition of basketball by the general public, however, has been delayed until recently by the lack of seating capacity already referred to.

But all of this is rapidly changing. The Big Ten colleges of the Middle West now have large arenas constructed especially for basketball. In the East, Pennsylvania built its Palestra; in the West, Leland Stanford built its Cracker Box. Important games attracted important crowds. The press gave it space. Basketballitis became an epidemic. Personalities began to emerge.

THERE had long been successful and colorful coaches; but until uniform rules made intersectional contests possible their fame reached only limited areas. Finally, at the University of Nebraska, where Pop Naismith had gone as Professor of Physical Education, a great basketball mentor of national repute, " Phog " Allen, emerged as a trainer not only of players but of coaches; and in 1930 one of his pupils, John Bunn, migrated to California, where, as basketball coach at Stanford, he became the game's best known figure.

Bunn's most notable contribution to basketball is the jumpless game. Instead of bringing the ball out to the center after each goal and tossing it up in the air for what is known as the " center jump," Bunn gives the ball at once to the team that has just been scored on for a toss-out from under its own goal.

This change adds even more speed to the game and between six and seven minutes of playing time. Also, it reduces the advantage that the tall player has always had over the short player. The jumpless game is now in the national rules.

The big universities are at last wise to the importance of the game from a financial standpoint. In most colleges basketball is the only sport besides football which pays for itself.

As the game increases in general public interest our shrewd graduate managers appreciate more and more the value of colorful personalities to draw a big gate. Already they are scouting the high schools and academies for players who are not poison at the box office.

In 1934 a new fillip was given to the intercollegiate game by a young New York sports writer named Ned Irish, who began promoting intercollegiate matches in Madison Square Garden. From the very first game, this professional promotion of an amateur sport proved itself a huge success.

To be sure, the game still suffers, as does football, from the absence of a real world's series to determine the national championship. Such synthetic attempts as have been made to determine the champion team have only increased the confusion. Last year, for instance, Duke won the Southern, Dartmouth the Eastern, Purdue the Western, and Stanford the Pacific Coast Conference titles; yet the tentative effort at a world's series, staged by the Metropolitan Basketball Writers' Association in New York, did not bring any of these leading teams together.

All we know for sure is that skill in the game, like interest in it, seems to be very evenly distributed.

In our larger cities public-school athletic leagues, Catholic Youth Organizations, the Y's, and many Protestant churches support basketball fives and conduct tournaments.

So-called commercial and industrial leagues also flourish in the metropolitan areas. And as I write, politicians and retail liquor dealers are also going in heavily for the basketball-sponsoring game. Popular, too, are the intercity leagues composed of teams manned by outstanding ex-college players.

AVOWEDLY professional clubs and leagues are also springing up in increasing numbers every year. For example, there is the American Professional Basketball League, which embraces principal cities in the East and Middle West.

Good players in the league sometimes earn as high as $1,500 a month, which may not compare with the top baseball salaries, but is not bad for a five- or six-months season. As a result, the pro game is attracting more and more young college grads who are all dressed up and have no place to go.

On the whole, however, professional basketball is still in the barnstorming stage. Freak teams like the bewhiskered House of David, the Roller-Bearing Flashes (who play the game on roller skates), and the Harlem Hottentots perform to sell-out houses in competition with locally known fives. The team captained by Jesse Owens, the Olympic champion, has cleaned up as a sort of olio between features in the movie houses.

Professional basketball offers a longer season than pro football does, and in the end should provide a larger income. Also, since it is played at night, the game enables its players to engage in business of their own during the day.

Another great advantage which the court game has over both baseball and football is the very general participation in it of women. Basketball is a strenuous game. But its strenuousness is of the quick-strength rather than the brute-strength variety. Quickness and resourcefulness are prime requisites. Into such a picture the woman athlete fits like a silk stocking.

In high schools the girls' basketball teams are almost as many and as popular as the boys'. In co-ed colleges the same situation prevails. And in colleges exclusively for women basketball is *the* major sport.

What the basketball craze, with its high entertainment value, its appeal to women, and its after-dark playing schedule, will do to the movies these winter nights, nobody can rightly tell.

With the development of floodlighted open-air arenas, basketball is also sure to cut into big-league baseball's summer take, because, although a game of vast activity, it can be played to advantage outdoors on the hottest evenings—and will be so played, I prophesy, within the next two years.

Then indeed basketball will have fulfilled its destiny. It will be a true national game, played by both men and women, appealing to both men and women spectators, enjoyed North and South, East and West, indoors or outdoors, all the year round!

THE END