Every Cornellian's Paper

Cornell ALVMNI NEWS

In the News this Week: Cornell is victor over Pennsylvania in Annual Football Classic. Thirty-one percent of new students have Cornell relatives--total of 922. The hydraulics laboratory and its importance to engineering. Recording bird songs for radio and phonograph is expert work. The lost snare drum (See Week on the Campus).

Volume 36



Number

The Pennsylvania Game

Continued from Page 117] Goldbas. Another pass, Brown to Holland, was knocked to the ground by Switzer. A five yard penalty against Pennsylvania put the ball on the Penn 31.

Brown kicked out to the Cornell 40, where the ball went out of bounds. Wilson was stopped at the line of scrimmage, after pushing through for a yard. Wilson went off tackle for two more. Two minutes left to play. Ferraro went off tackle for two yards, fourth down and five yards to go. Ferraro kicked to Lee on Pennsylvania's 15, and Lee ran the punt back to the 27. With one minute to play. Penn was obviously stalling for time, and the referee inflicted a five yard penalty. The ball was placed on the Penn 22. Two quick passes by Pennsylvania were knocked down by Cornell men, which lost another five yards for Pennsylvania. Lees had just started to run, when Terry smeared him in his tracks as the whistle ended the game.

Final score: CORNELL 20, PENN 12.

The summary:

| Pennsylvania | | Cornell |
|--------------|----|------------|
| Pennypacker | LE | Wallace |
| Palombo | LT | Puterbaugh |
| Powell | LG | Borland |
| Engle | С | Brock |
| McCaffrey | RG | Shaub |
| King | RT | Kossack |
| Powell | RE | Irving |
| Kellett | Q | Switzer |
| McCracken | LH | Goldbas |
| Lewis | RH | Ferraro |
| Lima | FB | Frederick |

Officials: Referee—D. W. Very, Penn State. Umpire—E. C. Taggart, Rochester. Linesman—G. W. Hoban, Dartmouth (Lehigh). Field judge—C. L. Bolster, Pittsburgh.

Score by periods:

| Cornell | 7 | 7 | 6 | 0-20 |
|---------|---|---|---|------|
| Penn | 0 | 6 | 6 | 0-12 |

Touchdowns-Cornell: Goldbas, Wallace, Switzer. Pennsylvania: Shanahan, 2. Points after touchdowns-Cornell: Ferraro, 2. Substitutions-Pennsylvania, Forrest for Lima, Shanahan for McCracken, Cresci for McCaffrey, Stofko for R. Powell, Neill for J. Powell, Chamberlin for Forrest, Brown for Kellett, Hopkinson for King, McCracken for Shanahan. Trerotola for Engle, Holland for Hopkinson, J. Powell for Kerr, Kellett for Brown, Mc-Caffrey for Cresci, R. Powell for Stofko, Neill for J. Powell, Forrest for Chamberlin, Stofko for McCaffery, Holland for Neill, Bradford for Pennypacker, Cresci for R. Powell, McCracken for Shanahan, Brown for Kellett, Lima for Forrest, Beck for McCracken, Suffredini for Brown, Detweiler for Palombo, Lees for Lewis. Cornell: Hutchinson for Shaub, Nelson for Kossack, Meiss for Brock, Condon for Ferraro, Schumacher for Irving, Wilson for Frederick, Brock for Meiss, Ferraro for Condon, Wallace for Schumacher, Brown for Puterbaugh, Terry for Goldbas.

Statistics of the Game

TOTAL

| | Penn | Cornell |
|--------------------------|------|---------|
| First downs | 8 | 6 |
| First downs by passes | 4 | 0 |
| First downs by rushes | 4 | 6 |
| Yards gained by rushing | 90 | 130 |
| Yards lost by rushing | 6 | 25 |
| Yards gained by passes | 164 | 64 |
| Forward passes attempted | 25 | 7 |
| Completed | 11 | 3 |
| Uncompleted | 11 | 3 |
| Intercepted | 3 | 1 |
| Number of punts | 10 | 12 |
| Average yardage of punts | 37 | 37 |
| Runback of punts | 100 | 40 |
| Fumbles | I | 1 |
| Own fumbles recovered | 1 | 9 |
| Yards lost, penalties | 39 | 46 |
| | | |

Their Last Game

Twelve Cornell men saw their last football game as undergraduates. Not all of them played, nor were all of them men of whom the alumni have heard. But some of them were the reason for the victory Thanksgiving Day. The list of men scheduled to graduate in June includes: George Hand, of Cincinnati; John Wallace, stellar end, of Brooklyn; Robert Grant, of Ithaca; Johnny Ferraro, varsity veteran, of Buffalo; Howard Freeborn, of Cazenovia; Nate Kossack, varsity tackle, of Kew Gardens, N. Y.; Homer Geoffrion, of Buffalo; John Terry, of Walton, N. Y.; Jake Goldbas, star line-plunger, of Utica; Henry Gally, of Lynbrook, N. Y.; Jack Luxford, of Hamburg, N. Y.; and Jerry Brock, Cornell's hardy center, of Buffalo.

Soccer

The Cornell soccer team closed its 1933 season Thanksgiving morning with a 6-0 defeat at the hands of the powerful Pennsylvania combination. The team was clearly outplayed by a veteran Red and Blue eleven which completed with nine straight victories, and a maximum of ten points for first place in the Middle Atlantic Intercollegiate League championship. Cornell took third in the League, behind Haverford, with three victories and two defeats.

The Pennsylvania eleven got off to a fast start with the wind, and put over two goals in the first quarter. Although Captain Serenati netted the ball in the second period, the score was disallowed because of interference, and after that Cornell was never a serious threat. The Red and Blue registered three times in the third period, once on a free kick, and once on a fumble by goalie Bodger, and once in the final quarter. Cornell showed its best offensive work in that quarter, but the able defensive work of the Pennsylvania team, headed by Suppel, was too skillful for the Red attackers.

Hsu, Wands, Scott, Reilly, Hoyle, and Chang scored one goal apiece in the Pennsylvanians' victory.

About The Clubs

Washington

While the football teams were playing at Hanover, Cornell and Dartmouth men of Washington met for their annual luncheon. Following custom, it was Dartmouth's turn to play host at the party. Clyde Hall '14 was the official Dartmouth cheerleader while Eddie Holmes '05 and his student chorus rendered their grand old Cornell hymn, "Ach! du lieber Augustine! We want just one Touchdown!" Alexander B. Trowbridge '90 provided a melodious tenor, Walter G. Distler '12 added materially to the volume, and Creed W. Fulton '09 presided at the blackboard.

Albany

As a prelude to the football game in Hanover the following day, alumni of Dartmouth and Cornell met for an informal dinner and smoker in Albany on November 17. The party was held at the Copper Kettle. Paul O. Gunsalus '24, president of the Cornell Club of Albany, presided, and the principal speaker was Professor Charles L. Durham '99.

Westchester County

The annual dinner of the Cornell Association of Westchester County was held on November 17 at the Scarsdale Country Club. Judge William F. Bleakley '04, as toastmaster, introduced President Livingston Farrand and Foster M. Coffin '12, alumni representative. In the business meeting that followed, Paul L. Bleakley '20, cousin of the toastmaster, was elected president to succeed Dr. Edward W. Weber '03.

Chicago

Provost Albert R. Mann '04 was the principal speaker at the weekly luncheon of the Cornell Club of Chicago on November 16. J. S. (Jake) Fassett '12, playing in Chicago in *Biography*, entertained with some of his famous stories.

Boston Women

The first meeting of the season of the Club was held November 4 at the home of Mrs. F. W. C. Lieder (Margaret L. Bailey) '03. The club plans to hold monthly teas on the third Tuesday of each month at four o'clock at the College Club, 40 Commonwealth Avenue.

Northern California Women

Meetings of the Club were held on October 14 and November 11. At the October meeting the group met for luncheon at the home of Mrs. Edwin W. Kramer (Olive R. Edwards) '05. The business meeting which followed was presided over by Mrs. Edgar A. Weymouth (Hester P. Tefft) '06, president of the club. Miss Lillian Bridgman '99, Grad., was hostess in Novebmer, when tea was served following a busniess meeting.

MAJURA-NALANDA And Mummy Clubs Dine

A very remarkable party was held at the Club as is the custom on the Friday following Thanksgiving.

The Mummy Club men present were, Eddie Gibson '08, Steve Vanderveer '08, Vic Herriman '08, Henry Humpstone '08, Van Whitehead '08, Paul Williams '10, Brad Delehanty '10, Bill Hawke '12, Emmet Murphy '22, Bill Wendt '26, H. Hoekelman '28, Kent Hall '28, Townsend Wainwright '28, Ned Johnson '28, Dick Wakeman '28, Bob Bliss '30, Carl Hoffman '30, Sherm Allen '30, Sam Wakeman '30, Charles Treman '30, Lan Harwood, Jr., '30, Fred Frantz '32, Bob Stevens '32, Tom Haire '34, Truby Forker '34, Bill Robertson '34, Doug Williams '34.

The Majura-Nalanda men were: Ralph Thomson '04, Tom Page '07, Carl Watson '09, Sport Ward '11, Charlie Beavers '11, Ed. MacArthur '11, Tom Ludlam '11, Charles Orme '17, John Ross '19, Charlie Baskerville, Jr., '19, Pat Thornton '21, Headley Harper '23, W. B. Van Houten '23, E. W. Goodwillie '27, F. B. Bradeen, Jr., '27, E. J. Weber '31, E. D. Baxter '31, Sy Austin, Jr., '31, Boris Petroff '31, Brit Gordon '33, Bart Viviano '33, Bus Burns '35, Sonny Clute '35, John Davies '35.

'35. Charles H. Blair '97 was a guest of Majura-Nalanda.

PSI UPSILON CENTENNIAL

Psi Upsilon Fraternity celebrated the centennial of its founding on November 24 at Union College, Schenectady, where the mother chapter was established in 1833. Edward L. Stevens '99, of Delhi, New York, completed his term as national president of the fraternity. Other alumni of the Cornell chapter who were present at the convention were James McCall '85, George B. Penny '85, Herman C. Riggs '89, Charles H. Blair '97, Harold F. Wardwell '07, Jansen Noyes '10, Foster M. Coffin '12, Donald C. Kerr '12, Hugh C. Edmiston '15, William C. Murray '21, Benjamin T. Burton '22, and Frederick W. Parker, Jr., '27.

THERE IS MUCH solace to ancient choristers in the theory that the general run of students sing the things they sing in the way they sing 'em, not because they prefer that sort of thing but because that's the only way they can sing. These Glee Club and Savage Club men possess trained voices under control. Undoubtedly they can croon through constricted tubes when they want to, but also they are competent to indulge in part-singing with throats that are open, free and untrammelled. The hopeful thought for today is, that being able to sing either way, it's harmony these boys select when they get together by themselves.

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The Following Leading Articles will Appear in the December Issue of the Cornell Law Quarterly

A Forgotten Section of the Fourteenth Amendment Martial Rule, In the Light of Sterling v. Constantin Creditor Control of Corporations; Operating Receiverships; Corporate Reorganizations Unfair Competition by False Statements or Disparagement by Phanor J. Eder by Charles Fairman

by Chester Rohrlich by Harry D. Nims

Notes and Comments on Recent Cases
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The Hydraulics Laboratory

Continued from page 114] Problems in river hydraulics are prominent among the subjects calling for extensive laboratory study. Cornell has made many contributions to this field particularly in problems involving the flow of water over dams and the control of the potentially destructive energy of the falling water. When it is uncontrolled, water forms deep holes at the foot of falls. If such holes are permitted to form below a high dam the safety of the structure is endangered. How to avoid such undermining has been one of the problems successfully handled by the Cornell investigators.

To carry on this work, small test models are constructed. They are then subjected to various tests that reveal their strong and weak points. The results of the tests on the models when properly interpreted, show clearly what will happen in the full sized structure. The expense of these tests is only a fraction of the cost of repairs to an improperly designed full sized structure.

Historians have claimed that in the long run the human race must conform to the large rivers. Nevertheless, hydraulic engineers feel it is not necessary to allow the rivers to do as they please. They have observed that in many cases rivers have seemed in doubt as to which of several courses to follow, and starting with this they have proved that with a little artificial control Ol' Man River can be kept within bounds. Cornell's experiments are working on such problems in the Fall Creek hydraulic laboratory and have evolved various types of flood control measures. Among the more recent studies is that of the movement of bed sand at a river fork, an important problem of river transportation.

The "bore," an abrupt tidal wave advancing up a river or estuary, is a subject of fascination in literature. In hydraulics it is termed a moving "standing wave" or "hydraulic jump," and at Cornell has been the subject of much study. Water rushing out into a river through sluice gates in a dam will "push the river away" under certain conditions and where the shooting water and the river merge a standing "bore" is formed, which devours in its turmoil the energy of the rushing waters. By means of models of different sizes the Cornell experimenters are making studies of this energy consumer. The fascination of the movement of the waters is disregarded in the quest for measurements and observations that will enable them to learn another of nature's secrets and if possible to harness it for the benefit of mankind.

GEORGE M. SUTTON Grad., curator of birds at Cornell, is one of those featured in the November issue of the *Literary Digest* under the caption, "They Stand Out from

the Crowd." The article contains a picture of Dr. Sutton and reads: "Dr. George M. Sutton, curator of birds at Cornell University, recently discovered, among other things, nine new owls. He has just returned from an ornithological expedition to the American Southwest; he has visited the coast of Labrador, canoed in Hudson Bay, explored the Florida Keys and the Rio Grande Valley. He is the author of several books on bird lore and as a youngster was a protege of Louis Agassiz Fuertes."

BECAUSE OF her serious illness, Lily Pons, coloratura soprano, postponed her concert scheduled for Bailey Hall, December 12. Professor Paul J. Weaver says that the Cornell Music Committee expects to arrange for a later concert but is unable to reach any definite agreement with Lily Pons' manager until the singer's condition is further improved.

James D. Brew '12 recently resigned his position as bacteriologist for the State Milk Board after a disagreement with the State Department of Health over its proposal to intensify the legal requirements on raw milk. According to Brew the Health Department is taking definite steps "in the direction of increasing the burden on dairymen by increasing the requirements."

Microphones and Feathers

Continued form poge 114] that the sound is greatly amplified. Drumming, as a rule, occurs between midnight and dawn and the song hunters went to the woods at dusk on a cold night in early Spring to wait for the bird to begin its call. All night they waited with no results. The next night as they were about to give up the drumming began. The look-out man touched a buzzer which awoke the operator in the truck and the recording began. A most successful film was made and was later synchronized with a movie of the grouse in action. This sound film now serves as the introduction to the series of bird song movies.

Phonograph records have been made of the entire series of film songs, and at the present time, Albert Brand is preparing to issue them in book form so that they will be readily available to bird lovers. In the meantime, he and Dr. Allen and Paul Kellogg are continuing their interesting work of exploring this borderland of the field of ornithology. One corner of the second floor of McGraw Hall is being made into a projection and recording laboratory and here they are studying ways of improving present recording methods. It is their hope that in the near future they will be able to make still better records of the inimitable music of American song birds.

Cornell Relatives

[Continued from page 115]

Personius, Ely W. '98 Phelps, Vincent '10 Rathbun, George J. '95 Risley, Harry B. '09 Roberts, James F. Rockwell, Theodore G. '90 Rogers, Pliny '06 Rogers, William W. '05 Rosenbaum, Bertram S. '09 Rosevear, Morris B. '08 Rossiter, Winton G. Schoenberg, Israel '10 Schuster, Mary Crawford '04 Mary C. Schwartz, Lewis H. '11 Seely, Hart I. '09 Serrell, John J. '10 Shaw, Adelaide Young '99 Shaw, Stanley N. '18 Shoemaker, Seth W. '08 Smith, Douglas A. '14 Smith, John B., Jr., '10 Smith, Mary Truman '93 Speyer, Elwin G., '07 Steele, Edward A. '06 Stevenson, S. Harvey '12 Strang, William F. '04 Sturgis, Raynor F. '10 Supplee, George C. '13 Swayze, Clayton I. '04 Ten Broeck, Floyd G. '95 Thomas, Royal D. '06 Thompson, Arthur L. '11 Thompson, Ray C. '09 Verbeck, Guido F. '10 Vincent, Edward C. 'or Weidman, John H. '03 Wells, Jesse W. '09 Wentworth, John '03 Wheeler, Ralph H. '09 Whipple, Asher P. 'or Wight, Frank C. '04 Williams, Harrison S. '02. Wilson, James K., Gr.

Catherine I. Elizabeth D. William T. Henry B. Stephen J. Samuel S. Pliny Richard A. Bertram F. Robert A. William G. Reva M. Martha J. Mary C. John J., Jr. Mary M. Dorothy A. John W. Aristeene W. John B., III Kenneth T. Elwin G., Jr. Francis R. Marion E. Clara H. Raynor F., Jr. Elizabeth C. Elvira A. David L. Royal D., Jr. Jean Helen D. Samuel S. Edward H. John H., Jr. Henrietta L. John, Jr. Ralph H., Jr. Ward R. John W. Mary E. Jeanne M.

A. Louis Kuehmsted '91 M.E. (E.E.) president of the Gregory Electric Company of Chicago, died on September 28, after a short illness. He was 67 years of age, born in Oshkosh, Wisconsin, and former professor of engineering at the University of Illinois.

Surviving are his wife, Lee K. Kuehmsted, and a daughter, Vivian Willis.

THEODORE VAUGHAN CARVER '97 died on October 20, after an illness of three days following a heart attack at his home in Ridgway, Pa. He was born in 1873, near Panama, N. Y., the son of Mr. and Mrs. Harrison Carver. He graduated from the Westfield High School, and following his graduation at Cornell he taught at the Westfield High School for one year. From 1901 to 1906 he was principal of Ridgway High School and after an absence of a few years in the West he returned and became accountant for the Ridgway Dynamo and Engine Company, and later for the Elliott Company there. He is survived by his wife, Ruth Chapin Carver, a son, Chapin, and a brother, Roy, of Cleveland.



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We have just received the new Cornell Calendars. We believe that the Morgan calendar is the best this year. The price is \$1.55, postage paid as usual. Outstanding pictures are Cascadilla Gorge, Goldwin-Smith Hall entrance, Myron Taylor Hall, Ithaca Falls (at night).

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CORNELL CLUB LUNCHEONS

Many of the Cornell Clubs hold luncheons at regular intervals. A list is given below for the particular benefit of travelers who may be in the some of these cities on dates of meetings. Names and addresses of the club secretaries are given. Unless otherwise listed, the meetings are of men:

| are given. Unless otherwise liste | ed, the meetings are of men: | | |
|-----------------------------------|---------------------------------------|-----------------------------|-----------------|
| Name of Club | Meeting | Place | Time |
| Akron (Women) | 1st Saturday | Homes of Members | 1:00 p.m. |
| Secretary: Mrs. Ralph B. D. | ay '16, 245 Pioneer Street, Akron. | • | - |
| Albany | Monthly | University Club | 12:30 p.m. |
| Secretary: George W. Street | '23, 158 State Street, Albany. | · | - |
| Baltimore | Monday | Engineers' Club | 12:30 p.m. |
| Secretary: Leslie E. Herbert | '30, 806 E. North Ave., Baltimo | | , , |
| Boston | Monday | American House, | 12:30 p.m. |
| Secretary: Walter P. Phillip | s '15, 11 Beacon Street, Boston. | 56 Hanover Street | <i>y</i> 1 |
| Boston (Women) | Tuesday (3rd) | Y. W. C. A. | 4:00 p.m. |
| Secretary: Mrs. M. Gregory | Dexter '24, 24 Somerset Street, V | Vorcester. | , 1 |
| Buffalo | Friday | Hotel Statler | 12:30 p.m. |
| | ton '17, Pratt & Lambert, Inc., B | | 7- F |
| | | College Club | 12:00 noon |
| | erger '25, 3900 Main Street, Egge | | 14.00 1.0011 |
| Chicago | Thursday | Mandels | 12:15 p.m. |
| | ke '24, 33 South Clark Street, Chi | | P |
| Cleveland | Thursday | Cleveland Athletic Club | 12:15 p.m. |
| | in '12, 1836 Euclid Avenue, Cleve | | 12.13 P.III. |
| Denver | Friday | Daniel Fisher's Tea Room | T2 - Y Z +2 +2 |
| | 5, 1660 Stout Street, Denver. | Damei Pisher's Tea Room | 12:15 p.m. |
| | | Union Guardian Bldg | **** ** ** |
| Detroit | Thursday | Union Guardian Bldg. | 12:15 p.m. |
| | '25, c/o Packard Motor Co., Det | | |
| Los Angeles | Thursday | University Club | 12:15 p.m. |
| | ter '18, 816 W. 5th Street, Los Ar | | т 1 |
| | Last Saturday | Tea Rooms | Luncheons |
| | fin '09, 1711 W. 66th Street, Los 1 | | |
| Milwaukee | Friday | University Club | 12:15 p.m. |
| | in '30, 727 Maryland Street, Milv | | |
| Newark | 2nd Friday | Down Town Club | 12:30 p.m. |
| | r '28, 744 Broad Street, Newark. | | |
| New York | Daily | Cornell Club, 245 Madison | Avenue |
| Secretary: Andrew E. Tuck | '98, 245 Madison Avenue, New Y | Tork. | |
| Philadelphia | Daily | Cornell Club, 1219 Spruce S | Street |
| Secretary: Stanley O. Law ' | 17, 907 Fidelity-Philadelphia Bld | | |
| | 1st Saturday | Homes of Members | Luncheon |
| Secretary: Miss Mildred H. | Hiller '25, 812 W. Birch Street, F | hiladelphia. | |
| Pittsburgh | Friday | Kaufman's Dining Room | 12:15 p.m. |
| Secretary: George P. Buchan | nan '12, Hotel William Penn, Pitt | sburgh. | , - |
| Pittsburgh (Women) | Monthly | Homes of Members | Afternoon |
| | Connor '27, Coronado Apartment | s, Pittsburgh. | |
| Rochester | Wednesday | University Club | 12:15 p.m. |
| Secretary: Leslie E. Briggs | 21, 236 Powers Building, Rochest | er. | 7.1 |
| Rochester (Women) | Monthly (usually Wednesday) | Homes of Members | Evening |
| Secretary: Miss Esther M. R | hodes '27, 224 Alexander Street, | Rochester. | |
| San Francisco | 2nd Wednesday | S. F. Commercial Club | 12:15 p.m. |
| | d '21, 575 Mission Street, San Fra | | |
| | 2nd Saturday | Homes of Members | Luncheon or Tea |
| | llark '10, 732 Contra Costa Avenu | | Duncheon of Tea |
| C (Va | Wednesday | University Club | 71 20 h m |
| 2,12200 | r '02, 316 South Warren Street, S | | 12:30 p.m. |
| | | | (|
| Syracuse (Women) | 2nd Monday | Homes of Members | 6:30 p.m. |
| | aden '24, 139 Wood Avenue, Syra | | |
| Trenton | Monday | Chas. Hertzel's Restaurant, | |
| Comment of Contract M. Disco | la de la Composition de la Assessa Tu | Bridge & S. Broad St | ts. |
| | k '24, 695 Rutherford Avenue, Tr | | |
| Utica | Tuesday | University Club | 12:00 noon |
| | ton '28, 255 Genesee Street, Utica | | D : |
| Utica (Women) | 3rd Monday | Homes of Members | Dinner |
| | Beakes '18, 159 Pleasant Street, Ut | | |
| Washington, D. C. | Thursday | University Club | 12:30 p.m. |
| | 05, 1416 F Street N. W., Washing | ton. | |
| Waterbury, Conn. | 2nd Wednesday | Waterbury Club | 12:15 p.m. |
| Secretary: Edward Sanderson | 1 '26, 155 Buckingham Street, Wa | terbury. | |
| | | | |

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You'll see the royal palms of Martinique preen in the golden sunshine. At Trinidad, you can pick up many little treasures in the Hindu shops... Barbados, for all its British pose, blooms with tropic gardens... La Guayra, whence you may journey to Caracas (that seed of old Spain in the Andes), and Curaçao (Dutch as the dikes), are rich in the lore of buccaneers. At Colon: the Canal, gay night clubs, the sport of bargaining for a panama hat... Finally, Havana, with its Jockey Club, its rumbas, its brilliant Casino.

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CORNELL ALUMNI NEWS

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The Pennsylvania Game

Cornell 20—Pennsylvania 12

AFTER a mediocre season, Cornell came back, in the annual Thanksgiving Day classic, to defeat Pennsylvania to the tune of 20-12. In an exciting game, packed with thrills from long forward passes and shifty runs, the Cornellians emerged victorious over the Quakers by a safe margin; and this despite the fact that the statistics of the game favored the Red and Blue.

Cornell scored first just before the end of the first quarter, and followed this with touchdowns again in the second and third periods. Pennsylvania made its two scores, neither of which was followed by the extra point, in the second and third quarters.

Cornell's outstanding men were Wallace, Ferraro, Kossack, Terry, Frederick, Goldbas, Brock, and Switzer. Pennsylvania was forced to depend largely on the efforts of Kellett, though substantial gains, and excellent play also marked the games of Shanahan, Lima, and Forrest.

Cornell's first score, late in the initial period, was effected by a long pass, Switzer to Goldbas, after Johnny Ferraro recovered a Pennsylvania fumble on the Pennsylvania 40-yard line. Switzer got loose on a 14-yard run, and Frederick pushed the ball to the Red and Blue 25-yard line. A lateral, Ferraro to Frederick, netted four more yards, and then diminutive Walt Switzer, intrepidly waiting until the coast was clear, stepped back and heaved a long pass to Jake Goldbas, who was waiting beyond the Pennsylvania goal. A twenty-one yard toss for the score!

The first Cornell touchdown was followed on the second period by one for Pennsylvania, and it looked like a nip and tuck battle for a few minutes. But shortly after Pennsylvania's score, Ferraro intercepted Kellett's pass, and ran to Pennsylvania's 40-yard line. From here, after two unsuccessful attempts through the line, Walt Switzer again stepped back, and let go a 41-yard heave which Wallace was awaiting. The big end trotted over the Pennsylvania goal, and that made the score 13-6. Johnny Ferraro got his toe working again, and the score was raised a notch, to 14-6.

The third Cornell score came with an astounding display of power by the Red team, which marched 48 yards in nine plays, early in the third quarter.

Frederick kicked off, and Pennsylvania brought the ball up to their 23-yard line, where they were forced to kick. Switzer gathered in the punt in his stride, and got the ball back to the Penn-

sylvania 41-yard marker before being downed. Switzer took the ball again, and cut through the line for eight yards. Condon, replacing Ferraro temporarily, followed with a gain of a yard more, and Goldbas made it first and ten with a 9-yard run, placing the ball on Pennsylvania's 22. After a Pennsylvania time out, Frederick made eight yards off-tackle, and Switzer took the ball to "pay dirt," the Pennsylvania 10-yard stripe.

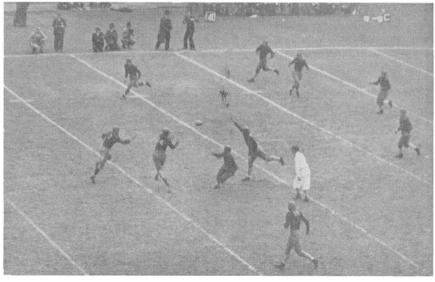
Pennsylvania substituted several men, in an effort to strengthen their crumbling line, but it did no good, for Frederick picked up the first half of the distance between Cornell and a touchdown, on his first try. Switzer followed with a gain of two more yards, but Pennsylvania had been offside on the play. The ball was called back, and a penalty inflicted, which amounted to just about the gainperhaps it was a few more inches. Goldbas tried his best to score, but the Pennsylvania forward wall suddenly stiffened, and he was smothered after gaining only a few inches. Third down, and about a yard to go, for touchdown!

Switzer grabbed the ball from the center, and just barely managed to get across the goal for the third and final Cornell touchdown.

Unfortunately, Ferraro, whose trained toe had been converting points after touchdowns so well, was not in the game at this moment, and Frederick's kick was blocked by Shanahan. Cornell 20, Pennsylvania 6.

Pennsylvania's first touchdown was scored on a long delayed pass, Kellett to Shanahan, from the Cornell 14-yard line. The ball was placed in scoring position by an 8-yard run through Cornell by Shanahan, and a pass, Kellett to Neill, which netted seven yards.

The second Pennsylvania score came in the last minutes of the third period on a finely executed pass, Kellett to Shanahan. Pennsylvania took the ball on their own 33-yard line, where Switzer's punt was downed by Irving. A pass, Kellett to Neill, was incomplete, and Chamberlain was stopped in the line by Condon. Then Kellett pulled back his arm and snapped a bullet-like pass to Lewis, who was finally downed on Cornell's 41-yard marker. Kellett picked up nine yards through the line of scrimmage, but Chamberlain again was halted, this time by Irving. Kellett barely brought the ball through for a first down, when Condon dropped him. Borland, playing a crackup game, stopped [Continued on Page 116



Wallace Catches a Pass from Switzer—The Pennsylvania Game

Photo by Morgan

Microphones and Feathers

Engineers and Ornithologists Combine to Make Birds Sing to Order

ETTING a wild songbird to pose for G the camera and sing into a microphone is a job that would madden the cleverest of Hollywood directors. In fact it did foil representatives of one of screenland's greatest companies until Arthur A. Allen '07 came to their rescue. That was back in 1928 when the movie company decided to make sound films of American song birds in action. Their technicians brought a sound truck into the vicinity of Ithaca and prepared to start filming. Day after day went by and they failed to coax any birds within 'taking' distance of their apparatus. They scared the birds away; they set up their equipment too late to catch the song; or they failed to locate the birds they wanted. In despair they called on Dr. Allen. He made a five-thirty appointment with the movie men for the following morning and by six-thirty they had the bird songs they wanted. Thus began Cornell's first experiment in bird song recording.

In 1930 Albert R. Brand, a stock broker who retired from the New York exchange in 1929, came to Cornell as a special student in ornithology. Part of the course work consists of learning the songs of several birds, and with characteristic business efficiency, Brand decided he could save time and trouble by buying a few bird song records rather than stalking his game in the field. To his surprise bird records were scarce. The best he could get were records of cage and garden bird songs, or poor imitations of wild song birds. His interest was aroused and he decided to make the records himself. He had a special sound truck built in New York, but it proved a poor investment. As Brand says, "There wasn't much similarity between the sounds going in and the noises coming out.'

He then turned to the communications department of the Cornell college of electrical engineering headed by Professor William C. Ballard '10. Here he obtained much advice. Professor True McLean '22 and Arthur C. Stallman '25 became interested in the project and completely rebuilt the sound truck. Other departments lent their assistance. Physics and education contributed helpful criticism and suggestions. Ornithology, of course, had been active from the beginning. Dr. Allen, Paul Kellogg '29 and Melvin P. Keane '32 of that department were active cooperators with Brand.

Thus the equipment was made ready and the song hunters began their field trips in the vicinity of Ithaca. Each morning at daybreak they had their microphone set up near the singing perch

of some feathered performer. When the bird alighted the recording apparatus was started and the liquid notes of the singer were transferred to sound movie film running ninety feet to the minute. Power was supplied from storage and 'B' batteries in the truck. To date 20,000 feet of film have been taken and the songs of more than 100 birds recorded. From the talkie film the sound is transferred to phonograph records that can be played on any phonograph with ordinary needles. School children, teachers, nature students and bird lovers can now hear faithful reproductions of the songs of American birds in their native habitat.

A troublesome part of the job is keeping out extraneous noises. In a sound studio the director can drape the walls with sound-proof curtains, he can lock the doors, he can lay heavy carpets on the floor. In the woods and fields, however, the song hunter must take what fate or a mooing cow brings him. "The 'soft whispering of the pines,' the 'low murmuring of the streams,' and the 'gentle sighing of the wind'," says Paul Kellogg, are fine to read about, but they play havoc with the sound camera." counteract unwanted sound effects, the song hunters have recently perfected a parabolic sound reflector built around a microphone and measuring three feet in diameter. Aimed at a bird it greatly amplifies the song and has the effect of reducing all sounds not in its focus. With this instrument songs have been successfully recorded from a distance of 500 feet.

Another difficulty is "buck fever." For three weeks, the Cornellians had been trailing a rose-breasted Grosbeak, hoping to record its song. Whenever they set up it would stop singing or else, sensing intruders, it would fly to a more distant perch to begin its aria. Finally they got the bird dead to rights. It settled within six feet of their microphone and began to sing as they had never heard it sing before. Their weeks of waiting were to be rewarded! In their excitement they were unable to set their machinery in motion. Try as they would they could not find the trouble until long after the song was ended and the singer gone. Then they discovered they had merely neglected to turn on a simple switch.

One of the greatest feats of the Cornell song hunters was their recording of the "drumming" of the ruffed grouse. This is the bird that makes its mating call by fanning the air with its wings. Starting slowly it beats faster and faster until the sound becomes a steady drumming. The bird usually takes its position on a fallen log in deep woods so [Continued on page 122

THE HYDRAULICS Laboratory

One of Cornell's most distinctive and yet little known buildings is the Hydraulics Laboratory impounded in the sheer rock wall where Beebe Lake spills down to resume its identity as Fall Creek. This building with the appearance of a transplanted medieval fortress has been the subject of countless unsuccessful photographs (unsuccessful because the light in the gorge is hard to estimate) and yet the average Cornellian knows little of what goes inside its cold stone walls.

In the Engineering Record of March 4, 1899, occurs this statement concerning the Hydraulics Laboratory which was completed in 1898:--"In so far as the ordinary student in engineering at Cornell is concerned, it is not probable that there will be much, if anything, in his curriculum specifying compulsory work in this hydraulic laboratory. As announced by the director, the work done in it will refer mainly to experiments having no other purpose than to solve problems in advanced work, in which undergraduates may be employed as intelligent assistants. The old hydraulic laboratory in the Civil Engineering College (basement of Lincoln Hall) will be used, as heretofore, as an adjunct to the classroom study of theoretical hydraulics. On the other hand, the graduates who wish to specialize in hydraulics will be taken to the large laboratory, and there encouraged and assisted in pursuing original investigations."

If this announcement was a source of consolation to prospective students their comfort was short lived. In 1905 the demand for more space by the materials testing laboratory forced the old hydraulic laboratory out of Lincoln Hall and into the Fall Creek plant. Likewise the professorial dream of a separate research laboratory with a staff free from undergraduate teaching was shattered. Research men have always maintained that "college would be a wonderful place if it weren't for the students" and this instance was no exception. However, funds were running short and it was financially impossible to carry out the original research plans even if it were not necessary to use the building for undergraduate teaching.

From that time until the present the building has been used for three general purposes: first, for undergraduate laboratory work and demonstration lectures and for advanced laboratory courses; second, for research work by graduate students and by members of the faculty; third, for commercial tests, some of a routine nature, but many involving difficult theoretical problems associated with experimental work. [Continued on page 122]

Cornell Relatives

Annual Check-Up Shows Long List of New Students Claiming Lineage with Graduates

DETAILED analysis of the facts given by the new students in their relation to Cornell men and women who are now alumni shows that 31 per cent have Cornell relatives.

Most of the information detailed below has been taken from the entries in connection with their registration made by the students themselves. Each year there are omissions in the tabulation, usually the result of some students omitting to indicate that any other members of the family were at Cornell before them. Foster M. Coffin '12, alumni representative, will appreciate additions and corrections on this list.

Despite the fact that there has been a decrease in the total number of entering students this year, the number of Cornell relatives is 922 as compared with 929 last year. The figure of 139 for the number of children with one Cornell parent shows a decrease from last year's high record of 153, but compares favorably with those of preceding years.

Out of the 1,536 new students this year, 479 have stated that they have Cornell relatives to the number of 922. Among the relatives represented, in addition to parents, are 146 brothers, 69 sisters, 41 aunts, 4 great-aunts, 172 uncles, 9 great-uncles and 305 cousins.

Eight of the new students this fall can trace their Cornell lineage through two generations: Adelaide E. Briggs is the daughter of T. Roland Briggs '09 and Frances O. Ingalls '12, and the granddaughter of Frank P. Ingalls '84; Elizabeth Dransfield is the daughter of Thomas Dransfield '10 and Mary F. Caldwell '10, and the granddaughter of Frank E. Caldwell '79; Carl B. Johnston is the son of Walter Johnston '12 and Mary L. Newman '14, and the grandson of Jared T. Newman '75; George W. Lauman and Mary W. Lauman are the children of George N. Lauman '97 and the grandchildren of George W. Wheeler '10; Lyman Middleditch, Jr. is the son of Lyman Middleditch '05 and the grandson of Frank A. Wright '79; Eleanor C. Raynor is the daughter of Francis K. Raynor '07 and the granddaughter of George C. Raynor '83; and Rowan D. Spraker, Jr. is the son of Rowan D. Spraker '13 and the grandson of Lewis G. Fay '82.

Marcia Brown is the granddaughter of John J. Herrick '91; Elizabeth M. Hopson is the granddaughter of James B. Nettleton '86 and Kitty M. Wilder '88; George L. Ogden is the grandson of George H. Pierce '86 and Mary H. Payntar '86; and Marian C. Patterson is the granddaughter of Eugene H. Ferree '91.

In the case of twelve students both father and mother attended Cornell before them:

| PARENTS | CHILD |
|-----------------------------|-------------|
| T. Roland Briggs '09 and | Adelaide E |
| Francis O. Ingalls '12 | |
| Henry H. Buckingham '02. | Rollo C. |
| and Naomi J. Carpenter '07 | |
| Harry G. Bull '08 and | Mary D. |
| Helen Dudley '11 | |
| Floyd N. Darling '10 and | Virginia N. |
| Margaret P. Stanion '11 | |
| Thomas Dransfield '10 and | Elizabeth |
| Mary F. Caldwell '10 | |
| Walter E. Hopper '08 and | Walter E., |
| Maude C. Hopper, Sp. | |
| Walter Johnston '12 and | Carl B. |
| Mary L. Newman '14 | |
| Richard A. Mordoff '11 and | Helen L. |
| Laura C. Fish '14 | |
| Frederick W. Phisterer '95 | Isabel D. |
| and Jessie A. D. Capron '96 | |
| John H. Reisner, Grad., and | Jessie H. |
| Bertha Betts '14 | |
| Joseph Slutzker '08 and | Joan L. |
| Pauline Hirsch '09 | |
| George M. Wicker '10 and | John W. |
| Martha L. Whiteley '12 | |
| | |

The following list gives the names of

| The following list give | |
|-------------------------------|-----------------|
| Cornell parents and Corn | nell Children: |
| Parent | CHILD |
| Adair, Arthur P. '99 | Elmer A. |
| Andrews, Nathaniel R. '04 | William R. |
| Aranow, Harry '04 | Robert H. |
| Armstrong, Alexander F. 'o | 1 Alexander H. |
| Ash, George '13 | George, Jr. |
| Atwood, Edwin H. '10 | Edwin H., Jr. |
| Axtell, Clayton M. '09 | Clayton M., Ji |
| Baker, Charles S. '09 | Charles A. |
| Baker, James H. '07 | Franklin, III |
| Banks, Percy E. '04 | Arnold S. |
| Barrus, Prof. Mortier F., Gr. | Benjamin W. |
| Beebee, Edgar V. '13 | Edmund W. |
| Bosshart, John H. '02 | Robert F. |
| Bredbenner, Edgar E. Sp. | Jeanne E. |
| Brew, James D. '12 | James D., Jr. |
| Browne, Arthur W. '03 | Arthur W., Jr. |
| Bryant, Frank A. M. '07 | Alvah G. |
| Burd, Harry G. '10 | Virginia G. |
| Caldwell, Walter B. '12 | Edward J. |
| Carey, Henry A. '12. | Rita |
| Carter, Wilber A. '13 | Preston D. |
| Chupp, Charles '16 | Karl R. |
| Clark, Charles A. '12 | Charles A., Jr. |
| Clark, Earl B. '14 | Donald J. |
| Clarke, Harold '14 | John W. |
| Coffin, Fielder J. '08 | Fielder J., Jr. |
| Coffin, Harry R. '08 | John H. |
| Conger, Alger A. '97 | Gerrit C. |
| Coors, Adolph, Jr., '07 | Adolph, III |
| Coryell, Jay '12 | Arlene E. |
| Cothran, Floyd '12 | Helen P. |
| Crittenden, Eugene C. '05 | Eugene C., Jr. |
| Daetsch, William J. '08 | William J., Jr. |
| | - - |

Danis, Benjamin G. '09 Davidson, John, Jr., '09 de Jesus, Francisco Dexter, Robert L. '10 Dillenbeck, Arvin J. '11 Doyle, Clarence M. '02. Dugan, William J. '07 Einset, Olav, Gr. Fennell, Thomas F. '96 Ferguson, L. Ray '08 Finlay, Walter S., Jr., '04 Foster, Frank G. '10 Frick, Benjamin O. '02 Getman, Arthur K. '11 Gilbert, Ernest M. '95, Guardian Goff, A. Cameron '13 Graham, Harry S. '11 Hanson, Elisha A., Jr., '14 Hartman, Leon W. '98 Hatfield, Albert R. '97 Hayt, Dr. Ralph A. '99, Guardian Hentz, Robert A. '11 Hough, Azel C. '83 Hulse, Shirley C. '02 Ingersoll, Vernon S. '98 Johnson, Louis E. '10 Johnson, Clyde P. '95 Jones, Eugene K. '08 Joseph, J. Arthur '08 Keller, George M. '09 Kelsey, Joel S., Jr., '09 King, Alvin W. '07 Korowitz, Louis '10 Lauder, A. Gilbert '02 Leader, Roy F. '13 Lee, Myron A. '09 Lindquist, Harold S., Gr. Lounsberry, Stephen M. '10 Richard C. Lowe, H. Leland '03 McCulloh, James W. '96 MacDiarmid, Milo S. '95 McKown, William R. '07 Macomber, Irving E. '94 Major, Carl W. '04 Marsh, W. Judson, Gr. Matson, Kathleen Connor '98 Donald D. Matthies, William H. '02 Mayer, William H., Jr., '15 Menges, Harry P. '10 Morgan, Frank M. '09 Moulton, Louis H., Sp. Moxham, Egbert '04 Nolan, J. Bennett '00 Nutt, John J. '99 Odell, Frederick E. '14 O'Donnell, James P. '09 Oliver, Clifford R. '08

Palmer, Everett A. '09

Pendergrass, Robert A. '00

Peek, John W. '10

Charles W. John, III Francisco de J. Toro Jane Esther M. and Harold A. James T. David D. Tohn Thomas W. Elizabeth L. Henry P. Edwin L. Sidney W. Kendall G. Richard A. Robertson Virginia M. Richard S. Kurtz M. Margaret E. Robert S. William J. Brennan Robert A., Jr. John E. Shirley C., Jr. Vernon L. Elliot H. Morse Eugene K., Jr. John A., Jr. George T. Thomas R. Douglas B. Saul R. Virginia M. Ellen E. Myron W. Ruth Richard H. James W., Jr. Hugh S. William R., Jr. Franklin S. Tean C. Paul B. Louise Elinor S. Robert H. Millett G. Greta M. Arthur J. James Gordon Louise C. Mabel B. Clifford R., Jr. Everett A., Jr. Anne W. John H. [Continued on page 123]

The Pennsylvania Game

Continued from Page 113] Chamberlain at the line, but a pass, Kellett to Neill, earned five yards, putting the ball on Cornell's 22-yard line. Kellett threw himself over the Cornell line for a first down on Cornell's 18, but was stopped on the next play after gaining only two yards. Then he stepped back, and turned and ran nearly ten yards toward his own goal, before heaving a long spiral to Shanahan who stood within the scoring area behind the Cornell goal. Goldbas tried to get the ball from Shanahan, as both grabbed for it together, but Shanahan twisted it from Goldbas' grip, and it was a touchdown.

Pennsylvania pulled off a most spectacular double pass play, and got away with it twice for substantial gains. It consisted of a forward pass, and a backward pass, from the receiver, to a third man. This play worked excellently twice, but on a third attempt, the first receiver, just as he was being tackled, tossed it backward to Shanahan, who was dropped in his tracks, so that Pennsylvania gained nothing on the play, whereas had the first receiver held on to the pigskin, the gain would have been some eight yards.

Play by Play

Cornell kicked off, defending the East goal. Pennsylvania tried on the first play to pull the old "sleeper" play, but due to a temporary halt by the officials before putting the ball into play, the man on the far side of the field was discovered in time to prevent the success of the play. Pennsylvania got off a quick kick, and Ferraro returned a kick, after an unsuccessful attempt by Cornell to pierce the Pennsylvania line. The ball was stopped on Pennsylvania's 40-yard line. Kellett dropped back on the next play and booted a long punt over the Cornell goal. From the Cornell 20-yard line, Ferraro made two yards through the line, and Frederick lost them again on an end run attempt. Ferraro kicked to the Pennsylvania 40yard line. On the next play a Pennsylvania player fumbled, but recovered with the loss of a yard. Kellett made two yards through the Cornell line before being stopped by Kossack. Kellett then kicked to Cornell's 20, where Switzer took the ball, and ran it back nine yards. A flip behind the line, Ferraro to Frederick, was fumbled, but Frederick recovered. Then Goldbas gave the ball again to Frederick, who went off tackle for three yards.

Ferraro kicked, and Kellett was forced out of bounds on the Pennsylvania 34. Lima hit the line for half a yard, where he was stopped by Kossack. Pennsylvania tried a quick kick again, but Switzer was ready for it on the Cornell 25, and returned it four yards before being downed. Goldbas hit the center of the line for two yards, and Ferraro kicked to

Kellett, who was tackled in his tracks by Wallace on Pennsylvania's 35. Lima ran around right end for five yards, and fumbled. The referee held the ball was dead, and Pennsylvania retained possession. Lima tried through the line, and made a yard. Pennsylvania tried a pass, Kellett to Pennypacker, but though the ball landed in the receiver's arms, it came with such force that he dropped it, and Ferraro got it on a bounce. There was some indecision as to whether the ball had hit the ground, but the officials decided it had bounced from the knee of a Cornell man, and the ball was Cornell's on Pennsylvania's 40.

From this point Cornell began a march for the first score. Switzer made a long run of fourteen yards around right end, where he was forced out of bounds by Kellett. Frederick made two more through the line, putting the ball on Pennsylvania's 25. A lateral, Ferraro to Frederick gained four yards, and then Switzer tossed a pass 21 yards to Goldbas for a touchdown. Ferraro converted. Cornell 7, Pennsylvania 0.

With one minute left of the first quarter, Ferraro kicked off, to Kellett on Pennsylvania's 10-yard line. The Pennsylvania triple-threat man returned the ball to the 35 before being dropped by Wallace, as the quarter ended.

Second Period

Pennsylvania lost five yards on a flip and lateral, but the officials called the ball back, both sides having been offside on the play. Forrest was stopped for no gain by Borland. Kellett kicked to Switzer on Cornell's 30, and the diminutive flash ran it back five yards. Cornell was penalized fifteen yards on the next play for holding, which placed the ball on the Cornell 21. A flip, Goldbas to Frederick, made a yard through the line. Switzer was held to no gain, and Ferraro kicked to Kellett on Pennsylvania's 35.

Kellett ran back the punt to the Cornell 44, before being forced out of bounds. Cornell called time out. Play was resumed when Shanahan made four yards on a flip from Forrest. A short pass, Kellett to Pennypacker, earned five yards for the Quakers. Pennsylvania lacked only half a yard for a first down. Kellett shoved the ball over on the next play.

Forrest made three yards at left tackle, and Kellett went through guard for five more. Shanahan ran around left end for eight yards, before being stopped by Switzer. Pennsylvania was penalized five yards on the play, for being offside. But a pass, Kellett to Neill, put the ball ahead seven yards, and Forrest hit the line for a half-yard, putting the ball on Cornell's 14. Then it was that Kellett threw the pass that resulted in Pennsylvania's first score, as it descended into the waiting arms of Shanahan. Kellett's try for the extra point was blocked. Cornell 7, Pennsylvania 6.

Pennsylvania kicked off to Cornell's 15-yard line, where Switzer received and ran the ball back to Cornell's 38. Ferraro got away on the next play for 14 yards around right end, and Goldbas picked up two more through the line. Time was taken out, as the ball rested on Pennsylvania's 47. Frederick made a yard and fumbled, and Pennsylvania recovered. Lewis's attempt at left-end lost a halfyard for the Red and Blue. Ferraro, on the next play, intercepted Kellett's pass and ran the ball to Pennsylvania's 40. starting Cornell's march for a second score. Ferraro was stopped at right end for no gain, and a pass, Switzer to Ferraro, was incomplete. Then Switzer stepped back and let fly a pass to Wallace, who took it for a touchdown, with the goal forty-one yards away. Ferraro again kicked the goal, making the score Cornell 14, Pennsylvania 6.

Ferraro kicked to Pennsylvania's 10yard line, and Shanahan ran it back to the 22. Cornell was off-side on the play, and the ball was kicked again, from the Cornell 35. Lewis took it on the Pennsylvania 25, and returned it to the 44 before being dropped. Chamberlain was stopped by Shaub at the line, after a gain of a little more than a yard. Brock stopped Brown on the Cornell 49, and McCracken was halted by Ferraro on the 47, for a 2yard loss. Pennsylvania kicked, and the ball was blocked at the line by Cornell, with Wallace recovering for Cornell, on the center-field stripe. Goldbas was held without a gain, and Switzer was also halted at the line. Ferraro kicked to the Pennsylvania 10-yard line, where Mc-Cracken took it to return to the Pennsylvania 17 before being stopped. Pennsylvania passed, Brown to McCracken, to the Pennsylvania 49-yard line, but the ball was called back. Brock was hurt on the play, and was replaced by Meiss, for Cornell. Pennsylvania tried a long pass, which Frederick knocked down. Pennsylvania then got off the first of its pass-and-lateral plays of the day, for a gain of twenty-five yards. The ball was on the Cornell 15-yard line, following another pass, as the half ended. Score: Cornell 14, Pennsylvania 6.

Third Period

Frederick kicked off to the Pennsylvania 8-yard line, where McCracken took the ball and ran it back to the 23. Pennsylvania tried Brown in a right end run, but gained nothing. McCracken was stopped at the line for no gain. Mccracken kicked, and Switzer took the ball on his stride, and ran to Pennsylvania's 41. Switzer cut through tackle on the next play for eight yards. Condon made another on a line plunge. Goldbas advanced the ball nine yards to the Pennsylvania's 22. Penn called time out, in order to pull itself together, but without much effect, for when time was called in again, Frederick made eight more yards through the tackle again. On

DECEMBER 7, 1933 117

the next play Switzer took the ball to Pennsylvania's 10-yard line. Frederick rushed the ball up to the Pennsylvania 5½ and Switzer made two more yards, but Pennsylvania was offside, and Cornell elected to take the penalty, which amounted to two and one-half yards. Goldbas was smothered under a mountain of Red and Blue players after advancing the ball to the one-yard line. Switzer took the ball on the next play and squirmed his way to the goal, for Cornell's third score. Frederick's attempt to kick the goal was blocked. Cornell 20, Pennsylvania 6.

Frederick kicked off to Brown on the Pennsylvania 15, where he was stopped in his tracks by Frederick. Chamberlain gained a yard, and McCracken was stopped by Condon on the Penn 17. Switzer took McCracken's kick on Penn's 40, and was forced out of bounds on the Penn 32. Condon hit the line for a half yard. Switzer lost one yard on an end run. A pass, Switzer to Goldbas, advanced the ball to Pennsylvania's 33. Switzer passed to Irving, over the Pennsylvania goal, but Kellett knocked the ball down.

When the ball was put into play on the Pennsylvania 20-yard line, Kellett made two yards through the line before being stopped by Schumacher. On the next play a pass, Kellett to Chamberlain, was grounded. Another pass, Kellett to Shanahan, was intercepted by Goldbas on Cornell's 49. Switzer lost four yards on an attempt through the line. Wilson, Cornell back replacing Frederick, took the ball on a long end run and was forced back to the Cornell 45. Switzer kicked to Pennsylvania's 33, where Irving downed the ball. A pass thrown too low, Kellett to Neill, was incompleted. Chamberlain was stopped by Shaub for no gain. Kellett to Lewis, a pass, was good for 24 yards, before Shaub stopped Lewis on Cornell's 41. Kellett went through the line for nine yards, and Chamberlain was stopped by Irving for no gain on a spinner. Kellett barely made a first down before being stopped by Condon. Chamberlain was halted at the line by Borland when he attempted another line plunge, but a pass, Kellett to Neill, was good for five yards, bringing the ball to the Cornell 22. Once again Kellett threw himself over for a first down on the Cornell 18. Kellett attempted another plunge, but was halted on the 16. Kellett took the pass from center, turned and ran toward his own goal for about ten yards, and then spun, dodged, and heaved a beautiful long pass over the goal line to Shanahan, who grabbed it just as Jake Goldbas tried to knock it down. Shanahan's grip was good, however, and it was a touchdown. Kellett's kick was blocked.

Shanahan kicked off for Penn, and Wilson received for Cornell on the royard line, and ran the ball back to Cornell's 30, as the quarter ended. Cornell 20, Pennsylvania 12.

Fourth Period

Wilson tore off left tackle for two yards. Again on a spinner, Wilson hit left tackle, and made five more. Ferraro kicked to Pennsylvania's 29-yard line, and the ball was run back by Kellett to the 35. Puterbaugh made a beautiful tackle just as it seemed he might get away down the field.

Kellett made three yards, before being stopped by Brock, who had reentered the game. Forrest gained another yard, and was tackled by Kossack. A short pass, Kellett to Neill put the ball on Penn's 44. Kellett stepped back for a kick and booted the ball out of bounds on Cornell's 16. Wilson made a yard through tackle, and Switzer, dropping back to kick, tried to fool the Pennsylvania team with a long end run, but was dropped at the edge of the field for a yard loss. Ferraro kicked out of danger to Pennsylvania's 45, and Kellett ran the ball back to the Cornell 42, where Brock downed him. Shanahan was stopped by Irving after gaining only two yards. Kossack was hurt on the last play, but was mended and remained in the game. Kellett shot a low pass to Lewis, but the receiver was unable to bend over far enough to pick it up as it went by. A pass, Kellett to Neill, and a backward flip to Shanahan gained only three yards for Penn. Kellett's next pass, to Shanahan, was incomplete, which called for a five yard penalty on Penn, and gave Cornell the ball on downs with ten minutes left to play. Ferraro made three yards through the line. Wilson was stopped at the line of scrimmage. Ferraro kicked out to Pennsylvania's 37, where the ball rolled out of bounds. Forrest made a yard through the line, and then Shanahan ran back and heaved a long pass to Neill, which was incompleted. Pennsylvania's ball on their own 38-yard line. Kellett's long pass to Shanahan was intercepted by Switzer, just before it reached Shanahan's arms, and the receiver dropped them around Switzer and tackled him. Cornell's ball on their own 45 yard line. Ferraro smashed through the line for five yards and again off tackle for two more. Switzer skirted right end for a first down on Penn's 40, and Pennsylvania was penalized five yards for being offside on the next play. Wilson hit off-tackle for a first down on Penn's 26. A late rally, Ferraro to Wilson failed to gain. Five minutes to play. Ferraro was forced out of bounds for a 5-yard loss on the 31. Switzer's pass was intercepted by Engel on Pennsylvania's 21. A double pass, Lima, to Holland to Brown, advanced the ball for Pennsylvania to their 36. McCracken was unable to gain through

A pass, Brown to McCracken, was knocked down by [Continued on Page 120

Just Looking Around

William Johnston Andrews '94 of Raleigh, N. C., sent us some interesting notes a little while ago. About the famous Chlorine Banquet of 1894, he protests that it was of course an accident; the raiders planned to use sulphuretted hydrogen, but chlorine gas was substituted at the last moment.

And concerning the great Fiske-Mc-Graw Will Case, he refers us to Mark Twain's Autobiography for a statement of Willard Fiske's side of the argument. Well worth looking up, if you don't know it already. "He was as dear and sweet a soul as I have ever known," Mark says of Willard Fiske.

Do you know of Mark Twain's other link to Cornell? Well, do you remember that enormous dusty machine that used to stand on the ground floor of Sibley Dome? That was the Paige Typesetting Machine, of which Mark Twain was the adopted father. It was a wonderful machine; it would do everything that a human being could do except drink and swear and go on a strike, so he said. And again, in 1889: "This is by far and away the most marvelous invention ever contrived by man. And it is not a thing of rags and patches; it is made of massive steel, and will last a century." The trouble is, it ran on Mark Twain's money, on his energy, on his strength and time that might have been put to better uses.

"Certainly it was a marvelous invention," said Henry H. Rogers. "It was the nearest approach to a human being in the wonderful things it could do of any machine I have ever known. But that was just the trouble; it was too much of a human being and not enough of a machine. It had all the complications of the human mechanism, all the liability of getting out of repair, and it could not be replaced with the ease and immediateness of the human being."

Finally the Mergenthaler Linotype Company bought it for \$20,000 (it had cost something near a million) and lent it to the University. Now it has a place of honor in the Mergenthaler Museum in Jersey City. I must get around there some time.

A little after the machine was sold, an author of a book for inventors and patentees asked Mark for his endorsement. Mark replied: "I have, as you say, been interested in patents and patentees. If your books tell how to exterminate inventors send me nine editions. Send them by express."

M. G. B.

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THE LIBRARY BUILDING

The recent removal of the forty-year-old flagpole from the old Cornell Library Building, in later years identified as the First National Bank Building, calls attention to an old Cornell landmark which is rapidly going the way of worn-out institutions. The Cornell Library building was built in 1864, on the corner of Tioga and Seneca streets, and in its day was one of the show buildings of Ithaca. It was constructed with money given by Ezra Cornell, who at that time owned a small home across the street, on the present site of the Ithaca Savings Bank.

In the early days of the University, there was no adequate lecture-room on the Hill suitable to the needs of the University. Cascadilla Hall, the first University building, had no lecture-room at all, and the small class-rooms on the top floor of Morrill Hall were not large enough to accommodate more than a couple of dozen students. White Hall, completed in 1869, had larger rooms on the third floor, now used for drafting rooms by the College of Architecture, and it was here, in "Morrill 15," that the first large Campus lectures were delivered.

In the two school years until this time, and occasionally afterward, all important University lectures were given in the lecture-room of the Cornell Library Building, the room which in recent years was known to many students as the home of the Happy Hour Theater. Here President Andrew D. White gave his brilliant lectures on mediaeval and modern history, which attracted not only students but many townsfolk as well. Here also the distinguished corps of non-

resident lecturers of the early days of the University, including James Russell Lowell, George William Curtis, Louis Agassiz, and others, lectured on literature and science to packed houses.

Having to attend lectures downtown was not so much of an inconvenience then as it would be now, for a great many of the students lived on the "flats," and many others lived part way up the Hill, on Buffalo or Seneca Streets. Most of the fraternities were situated downtown in the early days of the University, and crawled up the Hill only gradually.

The old Cornell Library Building now appears to be on its last legs. The First National Bank and the Happy Hour Theater moved away within the last few years, and now only the Ithaca Engraving Company and the Cornell Library itself occupy the building. The old lecture-room is in a bad state of preservation, and the main floor is occupied by sundry welfare and municipal groups which, it is likely, are only temporarily in residence there. The old building reflects but ill its ancient distinctions.

THE HERBARIUM

Cornell's herbarium in the plant science building now contains 120,000 specimens from all parts of the world. In the east wing of the second floor of this splendidly equipped building are the many rows of dark green steel cases that hold these rare and varied samples testifying to the profusion of the flora of this earth.

Among the more interesting of the plants that make up this collection are the "insectivorous" species, a group of plants that supplement their diet with an occasional reluctant insect. The most renowned of these aggressive plants is the "Venus Flytrap," native to the sand regions of North Carolina. It grows about six inches high and has three-inch leaves divided into two parts that hinge on the midrib. On the edge of each leaf are stiff spines; in the center are a few sensitive bristles. When a stray fly lights on the center brisltes or even touches them gently, the two halves of the leaf close together with a snap and remain closed until the fly is fully digested. Digestion is accomplished by means of digestive juices similar to those of man. Then the leaf comes open and the plant is ready for another fly. According to Professor Karl M. Wiegand '94, these plants resort to fly catching in order to make up for the definiency of nitrogen in the soil in which they grow.

Among the species native to the Ithaca region is the "Pitcher Plant." This is a species with urn-shaped leaves that catch and hold rain water. Into the water blunders a hapless insect. The overhanging slippery walls of the "urn" prevent it from crawling to safety, and it

is soon drowned in the rain water to be digested by the plant.

Another insect eater of this region is the "Sun Dew," a small plant with leaves resembling the upturned palm of the hand with fingers half closed. On the end of each of the "fingers" is a drop of clear sticky liquid. When the insect becomes stuck in the liquid the "fingers" close and the meal begins.

The "bladderwort" is a tiny plant that lives in the water and feeds on incautious wrigglers. In the leaves of the plants are a series of bristle arrangements that permit small insects to swim in but not out. Once in, the wriggler is soon converted into needed nitrogen.

Besides these unusual species, the Cornell collection includes many "type" specimens, which are the original plants used by their discoverer in first describing them for science. There is also a large collection of mosses and algae. Another interesting group in the herbarium is that of cultivated plants of North America. This section is fairly new and it is hoped that Cornell will soon have a complete set.

A fairly recent addition to the collection is the 40,000 specimens from the herbarium of the former Botany department of the college of arts and sciences. This collection was made from 1870 until 1913 by the Arts College botanists who were then housed in the southeast wing of Sage college. In 1913 the College of Agriculture began its botany department in Stone Hall and after a few years of duplication, the Arts College abandoned its botany courses, and stored its plant collection.

With the opening of the new Plant Science Building, the quarters of the botany department were enlarged and it was able to take over the Arts College collection of 40,000 specimens. This group, added to its own specimens makes the present total of 120,000 plants in the Cornell herbarium.

Statistics from the office of Miss R. Louise Fitch, Dean of Women, reveal that there are 1,305 women students enrolled in the University for the first term of 1933-34. There are 301 women each in the freshman and sophomore classes, 277 in the junior class, and 275 in the senior. One hundred and twenty-seven of the women students are registered in the graduate school.

ALL BUT about a hundred students live in University buildings, sorority houses, or with their families or relatives in Ithaca. The greatest number, 303, are residents of Balch Hall; 208 live in sorority houses, 189 in Risley Hall, and 179 in Sage College. One hundred and sixtyeight women students live either at home or with relatives. In addition, eighty-five students are earning room and board in Ithaca, and twenty have special permission to live with private families.

119

The Week on the Campus

Together With A Few Observations At Franklin Field

When a good many of you were in college there was no vacation, you remember, at Thanksgiving time-other than the day itself. Classes were held and lectures were given on Friday and Saturday quite in the usual manner. Some of the students attended these. In the last few years, however, university work has been suspended on Wednesday evening and the chimes have been mute until the following Monday morning. A majority, perhaps, of the students go home, or to New York, or to somebody else's home, (only a few to Philadelphia) but a substantial minority remain in Ithaca to sleep, or to catch up in their work or to go to hastily arranged parties. At such times Willard Straight is a godsend to the boys and girls who have to stay in town.

The WINNERS in their respective intramural leagues at Colgate and Cornell met each other last week to battle it out on Upper Alumni. In touch football the All-Stars of Cornell and a picked team from Colgate played to a scoreless tie. In soccer Theta Chi, the Cornell champions, were defeated by an All-Fraternity team from Colgate by a score of 5 to 2.

As for the Arts—the Dramatic Club presented Elmer Rice's "See Naples And Die" and the Musical Arts Quartet opened the series of chamber concerts at the Little Theater. They played beautifully—Haydn, Resphigi and Beethoven.

Nothing so emphasizes the peculiarity of the academic life as the personal advertisements that appear each morning in the Cornell Sun. Read this one. "Will the person who took the Tiffany clock from the chaperon's room at the Kappa Kappa Gamma Formal please return same to the desk at Willard Straight; no questions asked; valued chiefly for sentiment." We seem to have in our midst one of these fascinating society bandits. It's a good thing that the Kapoa dance was formal. If things had ever loosened up and become even a teeney, weeney bit informal the chances are this lad would have gotten away with the ice boy and the kitchen sink. And mull this one over in your mind: "Wanted— Transportation to Amsterdam for Thanksgiving recess. Call evenings.'

FOR THE BENEFIT of an older generation it should be explained that in the campus language of the period dances are either formal or informal. For an informal you come as you are; for a formal you shave and get into a dinner jacket. An age that thinks itself unconventional in reality adheres rigidly to the code of clothes. A student would be uncomfortable in a party if he were not dressed exactly as everyone else.

Fashions have changed in the last twenty-five years and so has the lobby of the Bellevue-Stratford. No longer is it a seething mass of Cornell alumni on the morning of Thanksgiving Day or the night before. The only sight that would seem familiar to the graduates of the Stone Age would be the House Detective. He seemed sad-said he hasn't thrown any of his old Cornell friends out of the Bellevue for years and years. Mr. William Kelly '00 still holds the record, he says, and seems likely to retain it. In 1908 he threw Mr. Kelly out six times in one evening and the last four times he threw him hard.

Among those seen at the game were Mr. William Kelly '00.

OTHERS WERE Mr. Charles H. Blair, Mr. Vail Stebbins, Mr. Glenn Warner, Mr. Bill Wendt, Mr. Wendt's brother, Herman, Mr. Emmett Murphy, Mr. Dick Wakeman, Mr. Tom Ludlam, Mr. Lou Henry and Mr. Heatly Green.

MR. GLENN WARNER, who has been pickled in football for the last forty-five years and who originated or perfected a large number of the formations and plays now in general use, sat just a little to one side where we could watch his expression, if any, as events progressed. Back of him sat a small group of gentlemen who from time to time shouted instructions to the Cornell quarterback and gave the other spectators a lot of information about football strategy. There were moments when we thought Mr. Warner was amused and others when he seemed to suffer.

SERGEANT BARBER of the United States Army and now detailed at the Cornell R.O.T.C. accompanied the band to Philadelphia. In the morning practice atFranklin Field a snare drum was broken and the sergeant was directed by the officer in charge of the band to "get another drum and have it here by one o'clock." Getting a drum in two hours at Philadelphia on a holiday is a large order but Sergeant Barber went at the job in the old army spirit. He was fortunate in picking up to

assist him, Mr. Laurence Gaurnier, now a prominent citizen and sportsman of Ithaca, but formerly a sergeant himself in the American Expeditionary Forces. Mr. Gaurnier joined in the quest with the same courage and complete lack of morals as possessed by Sergeant Barber and with the added advantage of wearing no uniform and having no military responsibility. They chartered a taxi and for an hour and a half dashed around Philadelphia with no results in the drum line. They were almost discouraged. Finally their progress was arrested at the side of Broad Street to let Gimbel's parade go by. Gimbel's parade contained an American Legion band. As it brushed by the taxi former Sergeant Gaunier had one of those inspirations which makes the American army so dangerous to everyone including its own members. He leaped. He grabbed a snare drummer (with his drum). He stuffed him in the waiting taxi and leaped back himself. The next second the cab was bounding down a side street with its back seat a whirling mass of sergeants, drum and drummer.

Our information is that it took twenty minutes down by the docks to convince that American Legion drummer that he was neither going to be killed or kidnapped and that all he had to do to get a dinner, a free ticket to the game, a five dollar bill and plenty drinks, was to lend his drum to the nice, kind sergeants for just a little while. And that's how the Cornell band borrowed the drum which permitted it to present the complete and magnificent front which thrilled the Cornell hosts at Franklin Field on Thanksgiving Day.

THE BROADCASTING booths at Franklin Field are pressed up close against the sky at either end of the lofty press box. The National is at one end and the Columbia at the other. From them you seem to be gazing down vertically upon the football field and the players look like ants in a tea-cup. The microphone used is very different from the kind sticking up in front of public speakers. It is placed horizontally and has the appearance of a small register counter-sunk in the window ledge. The operator sits over the register with his head and shoulders out the window and just talks. The broadcasting booth is the place from which to see the plays, because you look down into the formations and not across at them. Each player stands out distinctly at all times and is never obscured by the other players.