

The Quickstep

Seventy - Three Years of Photography

STARTING his photographic career in 1875 when wet collodion plates were standard equipment, Henry G. Peabody, who now lives in Glendora, California, has shown in the 71 years that have followed, that technique is of greater importance than equipment.

Most of the photographs reproduced in this article were taken with a home-made 8 x 10 inch box camera, 50 years ago, and show a degree of photographic artistry that will stand up to today's achievements. The techniques used by Mr. Peabody in his pioneering days, as well as his experiences as an early camera man, are of interest in a day of one thousandth second shutter speeds, $f/1.9$ lenses, and film speeds with a Weston rating of 200. Today, at 91, Mr. Peabody is making prints of salon quality in his Glendora darkroom, and commuting to Pasadena twice a week in order to work with much of his equipment stored in this city. As this is written, early in 1947, Mr. Peabody is waiting for enough snow to fall on Mount San Antonio, framed by two

closer peaks as it is seen from his home, to take a Southern California winter scene.

The prints of sailing craft illustrating this article are reproductions of those given to the California Institute of Technology by Mr. Peabody in the fall of 1946.

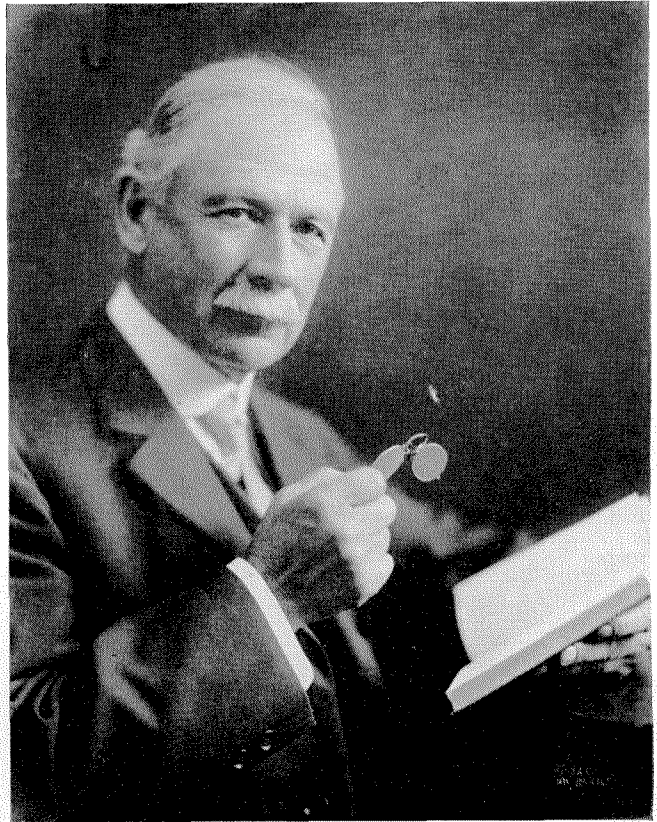
Mr. Peabody, who graduated from Dartmouth in 1876, started experimenting with photography as a student. It was still an avocation when he entered Massachusetts Institute of Technology to take courses in electrical engineering with the class of 1878, of which he is now the sole surviving member. After a year he took a job in Chicago with the Western Electric Company. While there he made photographs in his spare time, even going into partnership with another pioneer, Hesler, who took interiors while Peabody photographed landscapes and architectural detail. All of this was done with wet collodion plates, which had to be sensitized just before being used, exposed for what seems today an interminable

length of time, usually from five to 10 seconds, and then developed immediately.

It was still 1878 when Peabody's partner received a letter from a friend named Carbutt, disclosing that he was working on a dry plate emulsion and had arrived at a workable coating, but was in poor shape financially. Hesler thought the matter over and then sent about \$25 to Carbutt in exchange for some 5 x 8 inch plates. The Pullman Company had just ordered some interior pictures taken of its new cars by the firm of Peabody and Hesler. The dry plates seemed a light burden to carry through the car yards. Wet collodion plates used by all photographers at that time would have required either a speedy messenger to rush the newly prepared plates to the Pullman Company and back to the firm's dark-room, or a wagon to carry a portable darkroom to the scene to be photographed. Peabody tried the new plates. The results were excellent. This, he believes, was the first time that a commercial picture was taken on a dry plate in this country.

The new emulsion, besides being much handier, was also faster. An exposure of one tenth to one fifteenth of the previous time required became standard. With a lens speed of $f/16$, Peabody used shutter speeds as high as one fiftieth of a second, and this 10 years before Eastman popularized photography with low-priced cameras and films. Even today, Brownie-type cameras have a shutter speed of only one twenty-fifth of a second.

Among other commissions that Peabody carried out in Chicago were many catalogue illustrations for the Western Electric Company. Although the wood block was the only type of engraving then in use,



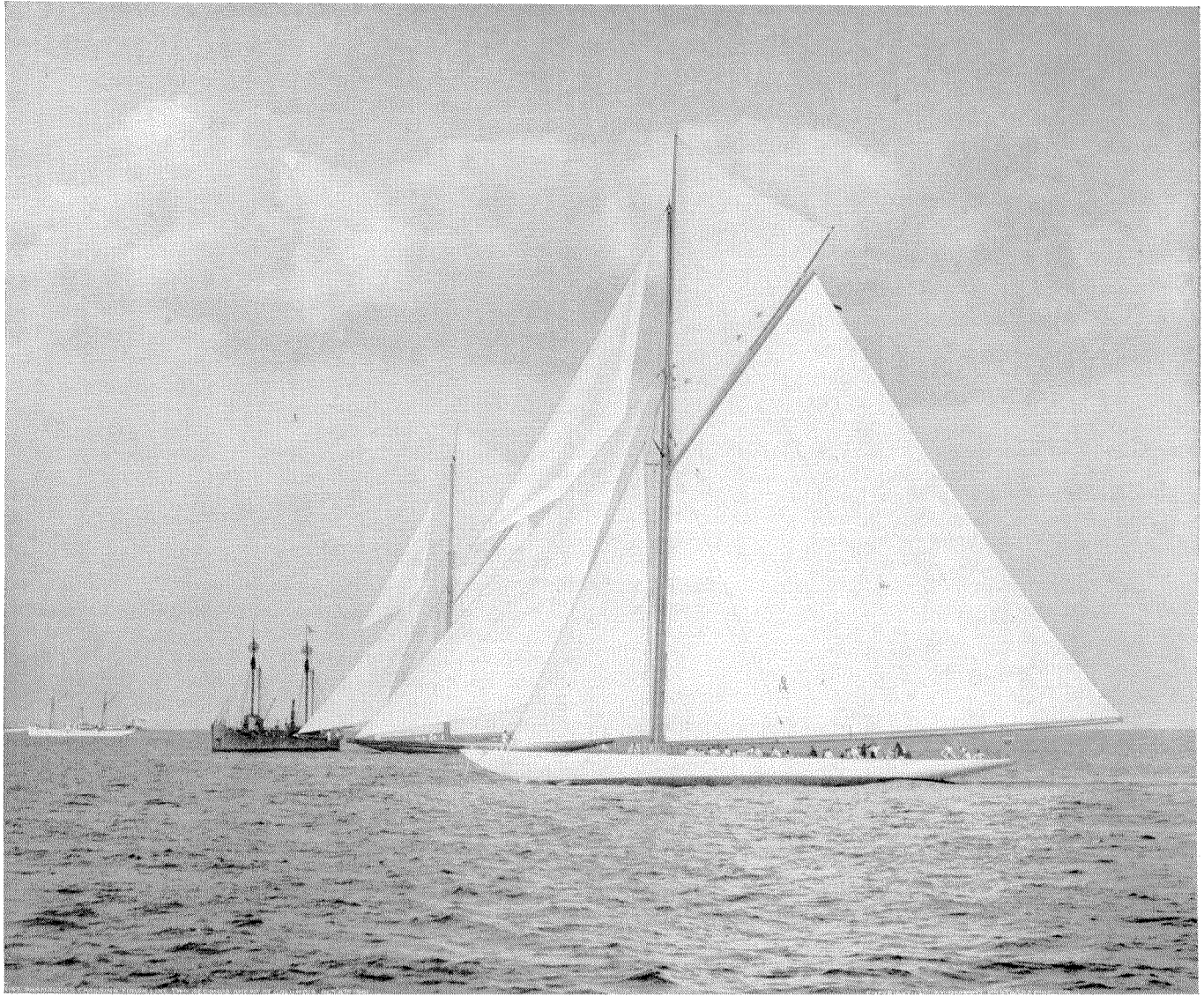
Henry G. Peabody

it was adapted to photographic reproduction by sensitizing blocks of wood, making prints on them, and then using the reproduction as a pattern. The carving was electrotyped and used to make the printing impressions. Half-tones soon improved the photo reproduction process, coming in near the end of the eighties and replacing other methods of reproduction by the middle nineties.

Leaving Western Electric and returning to Boston after eight years in Chicago and New York, Peabody found himself in the midst of the depression of '85. Electrical engineers were in small demand, and two years later, when the expanding industry offered many new jobs, he had immersed himself so completely in photographic work that he never left it.

As a young photographer in 1885, Peabody joined the Corinthian Yacht Club in Marblehead, Massachusetts, and later the Atlantic Yacht Club of New York. For recreation while he was serving as the official photographer of the Boston and Maine Rail-

LEFT: This photograph of the nine inch Equatorial Telescope at Dartmouth College was taken in May, 1876, on a wet collodion plate. It was made with a Harrison Globe lens, the first wide angle lens made in this country, with a stop of $f/22$, and an exposure of half an hour. Wet blotting paper was placed back of the plate in the holder in order to keep it moist and prevent the silver nitrate solution from drying and crystallizing during the long exposure and interval between the coating and developing of the plate.



Shamrock II crossing the finish line two seconds ahead of Columbia in an America Cup race, October 4, 1901. Columbia won this race, however, on time allowance. The Sandy Hook lightship is in the left background.

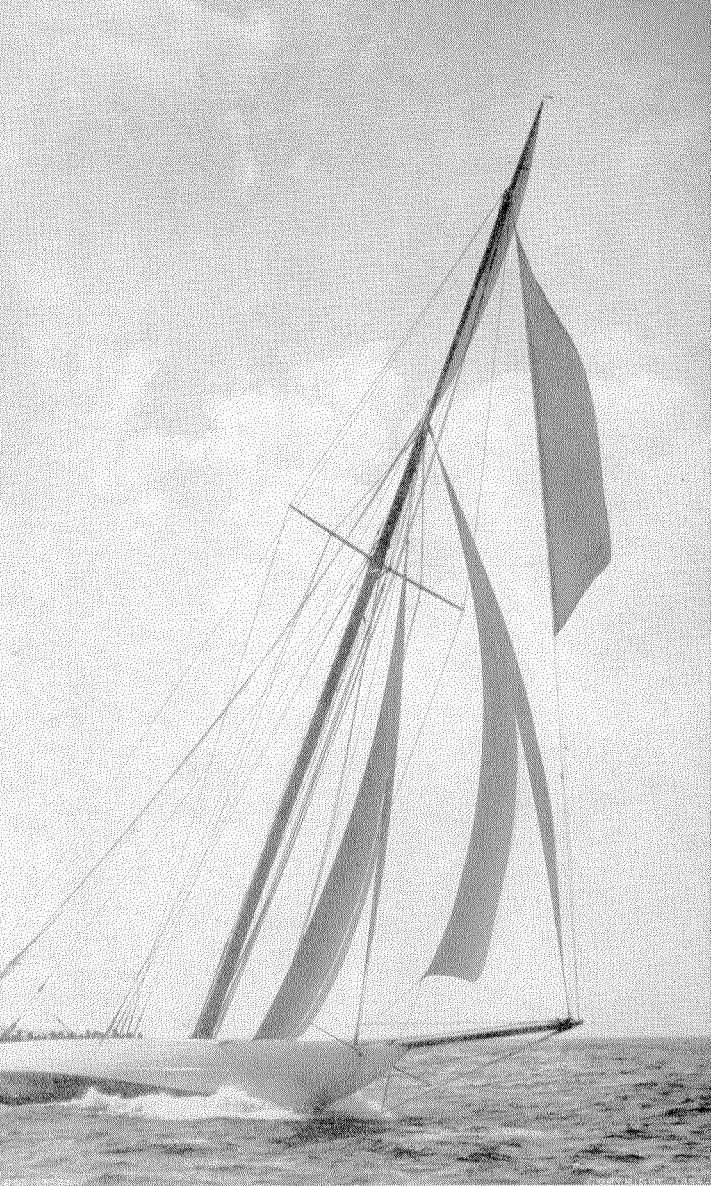
road, he photographed the yachts of members. Given a private car to use as darkroom and living quarters, Peabody took scenic pictures of the Boston and Maine route, and later worked under a similar arrangement with the Great Northern road when it opened its line to the Pacific Coast through the Rocky Mountains and the Cascades to Puget Sound. It was on this commission that he first used filters, employing some of yellow-tinted glass made by Carbutt, which were very similar to the K-2 Wratten filters now common.

Between trips to photograph railroad scenery, Peabody continued his work with yachts. Six defences of the America Cup between 1887 and 1903 gave him opportunities to photograph the finest sailing craft of that era. Besides the Cup races, the Newport trial runs and the Astor Cup events, the annual New York Yacht Club cruises around Cape Cod to Marblehead gave him ample opportunities to get pictures of ships under many conditions.

The America Cup races were patrolled by the Navy, and Peabody usually worked from the judges' boat, an oceangoing tug, or the Sandy Hook light-

ship. This craft marked the start and finish of the races, and thus provided a better vantage point for the photographer than did the crowded judges' tug. Although he usually took pictures solely for his own collection, Peabody carried **Boston Globe** credentials which got him on the press tug when an unpatrolled race would permit approaching the competing ships.

Much of this work was done with a rapid retilinear double combination lens, later replaced by a single anastigmatic lens. Peabody's first shutters were made in his own shop, but later, American photographers became so numerous as to permit a New York mechanic named Prosch to devote his full time to their manufacture. The Prosch shutters, designed to work between two lens elements, had three spiral springs of different tensions which gave speeds ranging to one two-hundredth of a second. Peabody used one of these shutters with a single anastigmatic lens, with the shutter in front of the lens. This arrangement protected the lens from flying spray, an important advantage when photographing is being done close to the water. In the nineties Peabody was even able to make successful exposures in the rain.



LEFT: Columbia running for the line in an America Cup race, October 17, 1899.

The camera he used in most of this work was a home-made box, about one foot square, with hand holds in front and a finder on the top. This took an 8 x 10 inch plate holder. The shutter release was extended to one of the hand holds. In use this camera was steadied against the photographer's chest while the exposure was made.

Even after it was no longer necessary for a photographer to carry a portable darkroom, the burden of the man who planned to take pictures outside his own front yard was not light. With cameras, tripods, and plate holders of rather solid wood, and all scaled to an 8 x 10 inch size, Peabody usually hired a cab to transport his equipment. Fortunately the railroads connected with the docks in New York where he did many of his photographic studies of racing yachts. Usually he carried 12 double 8 x 10 inch plate holders.

Many of Peabody's type photographs of contemporary sailing craft were made from his own 21 foot catboat, a steady keel-boat which he sailed single-handed, making photographs at the same time. These pictures represented the best yachts of recognized types. Peabody compiled two sections, depicting sloops and schooners, of a projected volume, **Representative American Yachts**. Showing his work, he sold subscriptions on the volume, then completed it and printed about 200 copies of the book. This subscription list, containing the names of J. Pierpont

Morgan, James Gordon Bennett, August Belmont, and other notables of that period, is now a valuable collection of signatures.

Representative American Yachts was illustrated by the Heliotype process, a method which converted the photographic negative into a printing medium which would take ink in proportion to its density. The emulsion was stripped from its plate, treated, and attached to a second plate of heavier glass. This method produced an excellent reproduction when printed on a hand press, but was limited as to the quantity of prints. Somewhat less than 1000 reproductions was the maximum number obtainable.

In 1898 Peabody went to work for the Detroit Photographic Company, and traveled for 10 years, taking pictures, chiefly views and street scenes in the large cities, national parks, and abroad. An observation made by Mr. Peabody was that while carriage wheels could be stopped by the shutter speeds then in use, the hoofs of the horses pulling them were always a little blurred on the film.

One of Peabody's photographic ventures of the early nineties was the "Squadron of Evolution," our new steel Navy. He photographed these ships as they were built, until the process was speeded up to the point where he could not get around to the shipyards in time to cover them all. One print of the Squadron was made in 1893, shortly after the picture was taken, on albumen paper, the best obtainable at that time. This German-made printing paper had to be sensitized before being used, and then exposed on the same day. The paper was carefully floated in a silver nitrate solution so that only the coated side was wet. After two minutes of this, the 18 x 22 inch sheets were hung to dry in the dark. Then they were suspended for 10 minutes in ammonia fumes. One print of the Squadron has been hanging on various walls for over 50 years without showing any signs of fading. Its contrast is about equal to number two paper today, which is termed "normal." Early photographers varied the contrast of paper prepared in this manner by changing the concentration of silver nitrate in the sensitizing bath.

Peabody spent the winters of 1898 and 1899 in Mexico, photographing Spanish Colonial architecture for Sylvester Baxter, in company with Bertram Goodhue the architect. A text, 24 volumes in size, of photographs of Mexican architecture of the Colonial period which was being ravaged by time, weather, and tourists, was produced. This may be found in the offices of many architects who have had available the price of \$350 for a set.

Stopping in Southern California on his return from the second winter in Mexico, Peabody was so impressed with this region that he never spent another winter in New England. After finishing his documentary work for the Detroit Photographic Company in 1910, he returned to the East only twice.

(Continued on page 12)

sought after, as much for his helpful counsel as for his whole-hearted laughter.

Those who knew Professor Laing best will recall evenings of serious, though never solemn, conversation; an inexhaustible supply of stories, limericks, and other light verse; and, occasionally an evening when he would sing, in a rich natural baritone, Scotch border ballads and other old songs.

Among Professor Laing's closest friends a number treasure some gift from his wood shop; for next to the delight he took in his work as a skilled wood-craftsman, he delighted to give it away.

From 1942 through 1944, Professor Laing was project supervisor for one of the Institute's confidential defense activities. A heavy responsibility, it meant making and administering a total budget of several hundred thousand dollars. Though his health was precarious during the war, he did not become seriously ill until about a year ago.

Mrs. Laing continues to live at the familiar, hospitable house on Pleasant Way.

This article was prepared by Dr. Roger Stanton, assistant professor of English Language and Literature, California Institute of Technology.

Seventy-Three Years of Photography

(Continued from page 8)

Most of Peabody's later work was designed to be used in visual education. In the twenties and thirties he photographed all of the national parks, at first producing lantern slides and later 35 millimeter film strips and motion pictures. More recently his motion picture films have been re-issued by Bell and Howell on 16 millimeter film with a sound track of descriptions by the photographer. Before this was done, Peabody traveled for 15 years, lecturing on the natural phenomena that he had photographed.

In the fall of 1920 the Norman Bridge Laboratory of Physics was under construction at the California Institute. Peabody suggested to Hiram Wadsworth, a trustee of the Institute at that time, that a photographic laboratory should be incorporated in the structure. After consultation with the architect, Bertram Goodhue, it was decided to adopt Peabody's plan, and a laboratory was built on the top of the building, connecting with the elevator shaft. Much of the original equipment in the laboratory was contributed by its designer, and some of it is still in use.

Mr. Peabody recently moved from Altadena to Glendora, and although he built a darkroom in his present home within a month after his arrival, he still commutes to his Pasadena laboratory two or three times a week. He still has prints to make from his negative files, and after the next fall of snow there will be several winter scenes to develop.

C. I. T. NEWS

PRESIDENT DUBRIDGE APPOINTED TO ATOMIC ENERGY ADVISORY BOARD

PRESIDENT Lee A. DuBridge was named last month by President Truman to serve on the nine-man advisory board to the Civilian Atomic

Energy Commission. This board, according to President Truman, has been chosen to advise the Civilian Commission on "scientific and technical matters relating to materials, production and research and development."

The first item on which the advisory board is expected to aid the commission is the layout of an atomic energy power plant and establishment of research centers in various parts of the nation.

Other members of the board include Professor J. R. Oppenheimer, Dr. J. B. Conant, Enrico Fermi, Glenn T. Seaborg, and I. I. Rabi.

SAILING TEAM LOSES CUP

COMPETING with Pacific Coast collegiate yachtsmen, the Caltech team failed to repeat its 1941 victory, and came in seventh out of a field of 10 in the second annual Pacific Coast Intercollegiate Sailing Association Regatta. Held in Newport Bay on Sunday, December 22, the race meeting was won by Stanford sailors, with Loyola and U.C.L.A. coming in second and third. Other colleges participating were Pomona, Santa Barbara State, U.S.C., U.C., and Fullerton and Santa Ana Junior Colleges. An Annapolis team was invited, but failed to arrive in time for the meet.

Three crews of two men each were entered by the participating colleges. Boats were supplied by the Newport Yacht Club, which borrowed them from members. In this race Dyer Dinghies were used, and distributed to the teams by lot.

Weather on the day of the race proved poor for sailing. Light breezes only occasionally disturbed the calm bay. The dinghies crept around the course with a few spurts by a boat or two on the windward side of the fleet.

Active on the race committee was Jack Palmer '41. This group laid out courses for three races, with all boats entered in each.

Further meets of a dual or triangular sort are planned by Institute sailors during the spring. No definite dates have been set so far.

MANY FORMER LETTERMEN ON TRACK TEAM

TRACK and field prospects for 1947 look good. Coach "Doc" Hanes, with 14 lettermen back in school, is expecting an exceptionally well-balanced squad. From the 1946 team are Paul Saltman, hurdles, George Brown, pole vault, Tom Miller, high jump, Doug MacLean, javelin, Bill Simons, 880 and mile, Bob Funk, 440 and Charles Shaller, sprints. Two javelin throwers from previous years, Jim Smith, who won letters in 1942 and 1943 and was throwing the javelin around 200 feet while in the service, and Chuck McDougall, 1942 letterman, are back. Stan Barnes, who ran the 880 in a little under two minutes in 1944, and Elroy Chinn, a 21-foot broad jumper, are squad members this year. Three graduates who starred on the championship 1945 team are eligible: Hubie Clark, quarter miler, Ken Shauer, 440 and 880 man, and Don Tillman, weights. Shauer holds the school record of 49.4s in the 440, and ran the 880 in 1m 59.2s. Tillman established new Tech records in 1945 with marks of 47 feet 3 inches in the shot and 142 feet 3 inches in the discus.