

History of UW-fotografy

(Idea and text, Tomas Jangvik)

1856 William Thompson

In 1856, the British William Thompson took the world's first known underwater photographs. The Englishman William Thompson lowers a camera in a wooden box to a depth of about five meters, but the camera drowns. To take a picture it required 10 minutes of exposure, but the sharpness was so bad that you couldn't see what was up and down in the picture, let alone what it represented.

1850s William Bauer

William Bauer takes pictures through a "window" from inside a submarine, which he built himself.

1860s Ernest Bazin

Bazin takes pictures from inside a diving bell. Bazin was a designer and was concerned with constructing devices to explore the underwater world.

1871 Bazin

A description of how to take pictures underwater is published by Ernest Bazin.

1888 E. G. Carey

Carey managed, with the help of lighting from electric arc lamps, to take pictures underwater. He stated the following; "With this, it will be possible to also use photography underwater in the service of science, which will be very important".

1891 Paul Regnard

Paul Regnard takes underwater photos. He was a French physician, physiologist and photographer. He was one of the first natural scientists to study the effects of atmospheric pressure on microbial metabolism.

1893 Louis Boutan



Frenchman Louis Boutan was a zoologist who worked at the Arago research station in southern France. He was particularly interested in the life cycle of the mollusk *Haliotis* (sea ear), described in Signallinan 36, 2015 20. This is not without significance in the context. Difficulties in catching its larvae alive meant that Louis decided to learn to dive. He also did this with notice. His research activities took him down to considerable depths and he got to see a lot of the underwater world beyond abalone. He described the advantage he felt he had gained in relation to his colleagues with a parable; "Today's marine biology finds itself in a situation that can be compared to that of an imaginary visitor from the moon, when he floats around in our atmosphere in his lunar ship and tries to make observations of life on earth" One can make the reflection, that it probably took longer than Boutan could have believed before diving was included as an important part of marine biology's working methods. For the same reason that many of today's sports divers start photography, namely to show the outside world what it really looks like underwater, Louis started his experiments with underwater photography. However, he was not alone in this. He had his brother, engineer A. Boutan, help in the camera construction. The camera case became a heavy and bulky piece of brass, to which an air-filled barrel was attached to enable underwater handling. An engineer Cahufour helped with the construction of the lighting. This was of the same type as E. G. Carey's, namely electric arc lamps. However, Boutan is also said to have used magnesium powder, which was ignited with a gas flame and where the oxygen came from the air in a barrel! After a long development period, it was time to carry out the first practical trials in the period May to July 1893 at Banyuls-sur-Mer (Mediterranean, near the Spanish border). Some of his pictures have been preserved and they are of a surprisingly high quality considering the circumstances. He also held some sort of depth record, which stood for about 40 years, by managing to take pictures at a depth of 50 meters in 1899. He himself wrote a summary of his work; "I have paved the way. It remains for others to follow suit, breaking new ground and making new strides towards the final consummation". If anyone, Louis Boutan deserves the title; "Father of underwater photography"

Text: Leif Samuelsson

1894 - 1899 Louis Boutan



Boutan manufactures a camera that lets water into the mechanics and thus avoids waterproof UV housings. However, he does not get sharp pictures and abandons the attempt. Louis Boutan also experiments with UV flashes consisting of glass containers with oxygen and magnesium.

1898 J E Romborsts and C L Bristol

J E Romborsts and C L Bristol begin taking pictures underwater. (Signallinan 36, 2015 21 1900)
Louis Boutan manufactures a remote-triggered camera with flashes and manages to take a successful picture at a depth of 50 m. He also publishes the first uv photo manual and then concludes his experiments with uw-photography.

1900-talet Jack Williamson

Jack Williamson an American journalist, photographer and author, invents a device that made underwater filming more practical. Camera and crew worked in a sphere connected by a long hose to a surface support vessel. The first commercial feature film made after Jules Verne's "A voyage under the sea", the filming is said to have benefited from the use of the device; which soon led to improved casings for feature film.

1905 Etienne Peau

Frenchman Etienne Peau experiments with spherical lenses when diving in the mouth of the river Seine. The technology is way ahead of its time and doesn't resume until after World War II, 40 years later.

1910s Francis Ward

Ward takes UV pictures of pike, otters, frogs and water birds.

1914 John Williamsson

Williamsson makes moving UW film.

1915 Fredrick Young

Englishman Fredrick Young (Royal Navy) Manufactures a UW camera for the British Admiralty Salvage Department.

1916 Submarine Photo Co

In Florida, USA, a company called Submarine Photo Co is started, probably the first of its kind. (Royal Navy) Manufactures a UW camera for the British Admiralty Salvage Department.

1917 The first color UW images

The first uw images in color (so-called autochromes) are taken by Dr W H Longley. Like Boutan, he was a diving researcher. Longley's camera case was partly different from Boutan's. Longley had a form of mirror finder for focusing. The mirror arrangement was such that the photographer could look through the viewfinder in the same direction as the lens, as the helmeted and clumsy diver could hardly lean forward over the camera.

(Signallinan 36, 2015 22)

1920s Torsten Gilsén

The Swedish marine biologist Torsten Gilsén, researcher on hard bottoms in the Gullmarsfjord, is experimenting with UW housings for cameras made of oak and lead sheet. By the end of the decade he was taking very good UW pictures with his equipment. He learned to dive with heavy diving equipment and partly performed the bottom scrapes himself, which was one of the methods he used.

1926 W H Longley

Dr W H Longley an ichthyologist, ichthyology is the study of fishes, collaborates with Charles Martin, of the "National Geographic Society". Martin contributed a lot to the development of flash technology. Their color pictures from the Dry Tortugas (Florida, USA) were published in the National Geographic magazine in January 1927.

1930s Maurice Ewing and Allyn Vine

Americans Dr. Maurice Ewing and Dr. Allyn Vine develop an "Ewing underwater camera" with synchronized flash.

Sir Robert Davis and U V Bogaerde carry out extensive UW photography of wrecks in Falmouth, England.

1935 Fenimore Johnson

The American Fenimore Johnson commercially manufactures cameras that use the self-sealing principle.

1937 Niels Christensen

The Danish-American Niels Christensen invents the o-ring, which has great impact for e.g. a. The UV photography.

1938 Hans Hass

The Austrian Hans Hass, then 18 years old, had met the American diving pioneer Guy Gilpatric the year before and was inspired to learn diving. He decided to become a diving zoologist. He had gotten so far now that he had managed to get a camera (the Robot Camera, with clockwork motor for film advance) built into a case, and together with a couple of fellow students he made a trip to the western coast of the Balkans (once Yugoslavia). There they freedived and harpooned to their heart's content, as well as photographed. At this time, Hans Hass photographed only in black and white and without additional lighting. The result of the trip was, among other things, an excellent book. (Signallinan 36, 2015 23)

1939 E N Harvey and Edward R Baylor

The Americans Dr E N Harvey and Edward R Baylor succeed in photographing small organisms at a depth of 1260 metres. The Austrian Hans Hass goes to the West Indies on a new expedition, still freediving and photographing in natural light, this time too his fine pictures become the basis for a classic book. Books and lectures brought in money for continued activities, but the war came and disrupted development.

1949 Hans Hass

Hans Hass develops the famous Rollei-Marine in collaboration with the German company Franke & Heidecke. An underwater housing for a double SLR Rollei 6x6cm camera. It became the most successful underwater camera of its time.

1941 US and British Navies

The American and British navies are beginning to use cameras for various underwater documentation missions, e.g. a. inspection of ship hulls and salvage operations.

1943 Jacques Yves Cousteau

Jacques Yves Cousteau, born June 11, 1910, died June 25, 1997, and Emile Gagnan developed the first breathing valve that used compressed air from a carried pressure vessel to deliver air during inhalation. This "Aqualunga" revolutionized diving, and gave photographers enormous freedom to experiment with underwater photography equipment.

The 1950s. He was also an environmentalist, innovator, researcher, photographer, filmmaker and researcher, who studied the ocean and its aquatic life forms. He helped develop Aqua-Lung. He was also one of the founders of the international diving organization, CMAS. In 1930, Jacques-Yves Cousteau entered the naval academy in Brest and became a naval officer in the French navy in 1933. It then became possible for him to do his first underwater experiments. He participated in the Second World War and was, among other things, an assistant to Emile Gagnan and together in 1943 they constructed the first commercially viable diving equipment where the inhaled air was not reused, it was called "aqualung". This was designed with a valve to deliver compressed air when inhaled. After the war, he was still a naval officer in the French Navy, with the task of, among other things, clear mines in ports. He also investigated shipwrecks and made the film *Épaves* (Shipwrecks). During the filming, or the planning before filming "Shipwreck", it was difficult to get hold of real film, (Signallinan 36, 2015 24). Cousteau solved this by acquiring lots of film that was normally used for small cameras and gluing these together in a suitable length. In 1950 he founded the French Oceanographic, FOC and leased the ship "Calypso" from Thomas Guinness for a symbolic sum of one franc per year. 1953 Jacques-Yves Cousteau publishes his first book, "The Silent World", co-authored by also Fredric Dumas (also involved in the formation of CMAS and later its president). 1956 JacquesYves Cousteau receives the Palme d'Or at the Cannes Film Festival for the film "The Silent World". 1957 He was elected director of the Oceanographic Museum in

Monaco. He conducted experiments on saturation diving and was then accepted as a member of the National Academy of Sciences in the United States. Cousteau continues to produce books and films.

1951 Alexandre Ivanoff

Alexandre Ivanoff develops a wide-angle solution for UW cameras, consisting of two lenses, a plano-concave (negative) as the outer lens facing the water and a concave-convex (positive) mounted on the objective.

1952 Arnold Stepanek

The Austrian Arnold Stepanek (founder of Subal) is inspired by Hans Hass and builds a UV housing of rubber and glass for his Kodak Retinette. He uses this for photography in, among other things, a. Streams.

1953 Rolleiflex

The camera manufacturer Rolleiflex patents a uw housing for its cameras based on specifications from Hans Hass.

René Hugenschmidt (Hugyfot) comes into contact with diving and becomes interested in uw photo. Hugyfot, Switzerland, starts production of uw housings limited to Agfa, Edixa, Exakta, Kodak, Leitz, Voigtländer and Zeiss cameras.

1954 Harold Edgerton

The American Dr. Harold Edgerton at MIT develops electronic flashes for uw cameras. Arnold Stepanek (Subal) casts a metal uv housing.

1955 Dennis Österlund and others

Dennis Österlund, Bengt Börjesson, Åke Follin, Ivar Dahlberg, Lennart Eriksson, and Curt Lindblad are planning an expedition to the Red Sea (Signallinan 36, 2015 25). They buy a boat that is rebuilt and adapted to the business, the boat is named "Red Sea". In January, the journey to the Red Sea starts, with a stop in, among other things, the mushroom diving town of Kalymnos in Greece, and then via the Suez Canal to Hurghada in the Red Sea. Outside Hurghada, several dives are carried out at the island of Abu Kasseh, where, among other things, crayfish are filmed. The group also finds several shipwrecks from World War II, as well as filming sharks. Off the coast of Sudan, you get to know pearl fishermen and you also film rays, barracudas and many other animals. The expedition leads to the book and film "Expedition Röda Havet" and it will be a Swedish milestone in both uw photography and uw filming. Åke Follin designed and had the expedition's breathing apparatus manufactured. In addition, he designed underwater cases for all the expedition's cameras.

1961 Jean de Wouters

Belgian inventor Jean de Wouters makes Calypso Phot for diving equipment manufacturer SOS. It will be the first waterproof 35mm amphibious camera with a 35mm lens, which can be used both above and below water. It came on the market in 1961 with a 35mm and a 28mm lens.

1956 Hugyfot

Hugyfot releases the first generation of uv houses, more adapted for divers. The models are equipped with side-mounted controls for aperture and focus.

1957 Hugyfot

Hugyfot manufactures a first generation uw housing for film cameras, mainly for Bolex, Bauer, Beaulieu, Camex and Nizo. The production is produced primarily for orders to divers and is delivered in more than 36 countries.

1959 Nikon

The world's first amphibious camera, Calypso Phot by Jean de Wouters, is licensed to Nikon.