https://doi.org/10.61345/2734-8873.2024.3.6

ODYSSEUS OF OUR TIMES: JACQUES-YVES COUSTEAU

Kalashnik Nataliia[1]

«For almost forty years now, I have lived on the ocean. I have dedicated myself to the sea, and wholly consecrated myself to it. I have explored depths that, until then, were unknown. I have had good days and bad days. I have dived in the waters of incredible transparency, and I have experienced the violence of waves like those at Europa, which tore the Calypso from its anchorage and battered its aging carcass with elemental fury. But, despite all the dangers, all the fatigue, all the sacrifices, I have never regretted the choice I made. The sea, in the final account, always brought me more joy than pain…» – Jacques-Yves Cousteau.

Abstract. When did man first dive under water? Three thousand, five thousand years ago? Or perhaps even earlier? Today no one would be able to say this. However, legends, fairy tales and fantastic tales tell us that already in those times that have sunk into eternity, man was possessed by a thirst to know and conquer "the world of silence." Why do we care about excavations, why are we drawn to travel, why do we dive underwater to look into the depths of the sea, who managed to break the record of the hero of Jules Verne's novel "Around the World in Eighty Days" at the end of the 19th century? We were told about great geographical discoveries in geography and history lessons, and people who made a lot of efforts to understand the world that we now call planet Earth. They are called discoverers and it is they who are described on the pages of this article.

The French oceanographer Jacques-Yves Cousteau is world-renowned as a marine explorer and defender of the oceans. He has sailed all over the world on océanographie expeditions and has also written and produced films about the oceans. In 1957, Jacques Cousteau was appointed director of the Institut océanographique in Monaco.

So, we invite you to go on an exciting journey through the world of amazing adventures and incredible discoveries with us!

Key words. Oceanography, oceanographic expeditions, oceanographic institutions of Monaco, Institute of Oceanography in Monaco, Oceanographic

[1] Ph.D. in Pedagogy, Associate Professor of Vinnytsya Mykola Pyrohov National Medical University. Candidate of Pedagogical Science (PhD in Pedagogy), Associate Professor. E-mail: kalashnuknatalia@gmail.com. ORCID: 0000-0001-5312-3280.

Museum of Monaco; personalities: Prince Albert I, Prince Renier III, Prince Albert II; Jacques Yves Cousteau.

Disciplines: Humanitarian studies.

Aim. Pay attention into scientific research on oceanography. To make people think about global climate changes and its impact on the environment through science and literature, to encourage scientific enthusiasm and develop personal qualities of leadership in science by the example of the activities of outstanding figures such as: Prince Albert I, Prince Rainier III, Prince Albert II and Captain Jacques Yves Cousteau.

Studying aim. Engaging learners in experiences focused on the ocean to help them build personal connections to the ocean, coasts, and Great Lakes that would motivate them to become ocean literacy and to act on behalf of the ocean.

Target. Every year on June 8th the holiday is celebrated – World Oceans Day. This important environmental holiday was officially proclaimed by UN General Assembly resolution 63/111 of December 5, 2008. The idea for this event was first proposed in 1992 at the Planet Earth meeting in Rio de Janeiro. **Its goal** is to highlight the inextricable connection between humans and the ocean, and to raise awareness of important activities in its protection.

Solution of the target. The ocean covers most of our planet, is the source of most life

on Earth, regulates our weather and climate, provides most of our oxygen, and feeds much of the human population. After decades of pollution, habitat degradation and overfishing, now climate change and ocean acidification threaten the health of the ocean in unprecedented ways. *Better public understanding of the ocean* is an important part of resolving these complex and critical issues.

Actuality. The Ocean is the defining feature on our blue planet. Five great, interconnected ocean basins, the Atlantic, Pacific, Indian, Arctic and Southern, make up the only ocean in our solar system, and contain 97 percent of Earth's water. All life, including our own, exists because of the ocean. Our lives depend, now and forever, on the health of the ocean. *Understanding the ocean is essential to comprehending and protecting this planet on which we live.*

Reproduction of material. When did man first dive under water? Three thousand, five thousand years ago? Or perhaps even earlier? Today no one would be able to say this. However, legends, fairy tales and fantastic tales tell us that already in those times that have sunk into eternity, man was possessed by a thirst to know and conquer "the world of silence." Why do we care about excavations, why are we drawn to travel, why do we dive underwater to look into the depths of the sea, who managed to break the record of the hero of Jules Verne's novel "Around the World in Eighty Days" at the end of the 19th century? We were told about great geographical discoveries in geography and history lessons, and people who made a lot of efforts to understand the world that we now call planet Earth. They are called discoverers, and it is they who are described on the pages of this article.

Jules Verne, in his fascinating novel 20,000 Miles Under the Sea, was many decades ahead of his contemporaries. The brilliant science fiction writer discovered the ocean with its incalculable riches for millions of people around the world. Under his pen, a living picture of the "seventh continent" arose, which is capable of giving people everything they need for life. The depths of the ocean indeed hide priceless treasures, and Jules Verne had no doubt that the day would come when man would be able to take possession of them. In this vision, the utopian Jules Verne showed himself to be a realist. Already many hundreds of years ago, man's desire to comprehend the secrets of the depths of the sea was born. Back in the 4th century BC. Aristotle designed diving equipment, and his student Alexander the Great carried out diving experiments in the Mediterranean Sea. There are medieval engravings depicting a glass barrel being lowered into the water on a rope. It is lit from the inside with lamps. According to legend, Alexander the Great once plunged into the sea in this "diving barrel" and saw such miracles there that even the most ardent imagination could not imagine. There may be a grain of truth in this legend. However, all these attempts were just random excursions of amateurs into the area of interest to them, which had no scientific significance. But even after man went out into the ocean and began to study its upper layers, the underwater element continued to remain unknown and mysterious to him. The great traveler and historian of the ancient world, Herodotus, tells about the remarkable feat of the ancient Greek hero Skillis. This happened during the Greco-Persian wars one stormy night. Skillis dived to a depth of 1,500 meters and cut the anchors of the ships of the enemy fleet. According to history, that night the anchor ropes of the Persian ships actually broke, and huge waves threw them ashore. So the Greeks defeated the flotilla of Xerxes [6].

The 22-year-old heir to the throne of the Principality of Monaco Prince Albert I began expeditions to explore the seas and oceans, in which He himself designed various devices and gradually became the owner of four research ships. When Prince Albert Ist of Monaco bought his first vessel, renamed Hirondelle, in 1873, almost 150 years ago, oceanography was in its infancy. Building on his experience with the Spanish and French Navy, he sailed the Mediterranean and the Atlantic as far as the Azores and Iceland and became a well-seasoned navigator.

Later Prince Albert Ist of Monaco wrote: "I write these first lines while crossing the waters of Spain where my naval career began... But the Ocean, similar to the hearts of men, closes the folds under other palpitations of its surface. I write while the undulating sheet reflects the columns of Hercules among the sails gathered from all corners of the world on a current tinged with azure; and Gibraltar appears, in the freshness of the morning, like a gateway to Europe which opens to the radiance of the rising sun. Thus hope sometimes awaits men at the bend of a road, to announce to them happy days… Here I expose the emotions of a navigator matured in the culture of truth; the fruit of impassive resolutions: a work advised by the scientific and upright spirit which brings people together in the legitimate conquest of well-

being and morality… ", where written in major work of Albert I of Monaco «The Career of a Navigator», whose first edition dates back to 1902 [5].

Ten years later, his curiosity and frequent discussions with the scientists of his time led him to turn to oceanography. Starting with Hirondelle and continuing with three successors specially designed for marine research, he led 28 oceanographic cruises across the Mediterranean and the Eastern Atlantic between 1885 and 1915. To share with the general public theresults of these cruises and display the many instruments that were developed at his instigation, Prince Albert Ist initiated the construction of the Oceanographic Museum of Monaco, of which the first stone was laid in 1899. In 1906, he established the Oceanographic Institute in Paris, which today brings together "Maison de l'Océan" in Paris and the Oceanographic Museum in Monaco [2].

In his speech about the ocean, Prince Albert I said: «The science of the sea enters this palace, where the architect placed the imprint of his brilliant plans, when I wanted to unite in one illuminates the two guiding forces of civilization: Art and Science… Here, gentlemen, you see, the Monegasque land has given rise to a temple proud and inviolable, dedicated to the new divinity which reigns over intelligences. I lent the strength of my brain, my conscience and my sovereignty to the extension of scientific truth, from the only terrain where mature the elements of a stable civilization, guaranteed against the inconstancy of laws humans. Soon the analysis of the facts recognized in the formation and movement of the world showed that the Ocean had played the main role in the chain of causes and effects to which the appearance of life is due. It was then that the study of water fascinated scientists, as also the growing crowd of those who understand the pleasures of knowledge, and who love to fight the fierce army of ignorance!... Gentlemen, I open the Oceanographic Museum of Monaco to bring it to service of scientific truth»[5].

He led twenty-eight scientific expeditions. Collaborated with the best scientists. He brought back many important specimens and artifacts from his travels. He also supported other researchers, advocated for the protection of nature. He founded the Oceanographic Institute in Paris and the Oceanographic Museum in Monaco. This Monaco establishment in a beautiful building right on the seafront presents visitors with an underwater world, the pioneering voyages of Prince Albert I, the latest discoveries and six thousand marine animals in aquariums.

There are many reasons why people study oceanography. An understanding of ocean processes is obviously vital to oceanographers, marine biologists, or environmental scientists, writers and governments. "It is up to us, the Heads of State, to collectively seize this opportunity to turn our blue planet onto a sustainable path and thus enable our children and future generations to thrive in a fairer and healthier world," -excerpt from Prince Rainier III of Monaco's speech at of the UN conference in Rio de Janeiro in June 1992. Persistent observation of the underwater world allows not

only to discover its beauties. The consequences of human activity are also, unfortunately, quite visible. At that time, the emphasis was on pollution, especially chronic pollution, dumping of chemical and even nuclear waste. The ocean cannot be a place for storage or dumping. On the initiative of the prince, numerous initiatives were organized, including: opposition to the dumping of nuclear waste in the Mediterranean Sea; placement of laboratories of the highest level investigating the marine environment; and even initiating international agreements to combat pollution and protect endangered species [10].

For thousands of years, people have experienced fear of the elemental forces of nature, and for all eternity they were given over to the power of these forces. Over time, fishermen learned to weave nets and make boats to go out to sea to fish. Millennia passed. Scientists observed the ebb and flow of the tides and took measurements of the coast. Engineers built harbors and dams, and sailors plied the oceans on various ships. But the underwater kingdom, as before, remained inaccessible to humans. His possessions were limited to land constituting a little more than a quarter of the entire surface of the Earth. Geologists study the properties of sea soil, biologists study the flora and fauna of the ocean, find methods for the best use of these resources, and divers get acquainted with the latest achievements of science. Scientists, in turn, master the technique of deep-sea diving. This is how a new, young generation of researchers grows up. A naval officer, a hero of the Resistance, he became "the most famous Frenchman on the planet." Even in his childhood and youth, he passionately loved the sea, became more and more interested in mechanics, design, photography and filmmaking. Thanks to him, people were able to see the underwater world. And the great Frenchman invented things that made it easier to explore the underwater depths. He was nicknamed the Odysseus of our times. But if the Greek Odysseus was crossing the oceans by the will of the gods, Cousteau chose this path in the crucial year 1936. Aviation was not an option for the young officer, so he turned to the sea. Cousteau was now busy with inventions unveiling the ocean's mystery to man. After designing goggles, he came up with the scuba diving idea, letting a man breathe under the water [4].

About his first experience diving with scuba, Captain Cousteau, the founder of the Underwater Research Group of the French Navy – OFRS (Office Francais des Recherches Sous-Marines) and the author of the famous book "In the world of silence" writes: "I swam over the rocks and found that I can easily compare with flounder... Swimming like a fish, horizontally, was the most natural method of movement in an environment eight hundred times denser than air. It was like being in a dream: I could stop and hang in space, without leaning on anything, without being tied to any hoses or tubes. I often dreamed before that I was flying with my arms spread like wings. And now I was soaring, in fact, only without wings. After my first "flight" with scuba diving, I never flew in my dreams again. Cousteau, developing his sensational apparatus, relied on the experience

accumulated by his compatriots. The French were pioneers in the field of autonomous diving – diving without air hoses and without lifelines to restrict the diver's movements. Back in 1865, Rouqueirol and Deneyrouz designed a self-controlling diving apparatus that allowed diving to depths of up to fifty meters. Flippers and waterproof goggles, however, had not yet been invented; there was only a nose clip. The diver received air from a steel tank. Its inflow was regulated automatically using inlet and outlet valves. Only in 1926, the French designer Yves Prieur created the world's first diving apparatus with compressed air cylinders. His compatriot Louis de Corrier invented flippers. Armed with fins and his artificial lung, Le Prieur could easily move in all directions in the water, just like scuba inventor Jacques-Yves Cousteau seventeen years later [6].

Jacques-Yves was never short of ideas! Captain's Jacques-Yves Cousteau's scientific initiative closely resonated with intergovernmental cooperation projects, where the Principality of Monaco played a decisive role in the person of Prince Rainier III:

- 1976: Ratification of the RAMOGE agreement (Saint-Raphaël, Monaco-Genoa) between France, Italy and Monaco to protect the marine environment. **The Permanent Secretariat** coordinates all the activities and ensures that the work programme is properly implemented. Its functioning is ensured by the Government of the Principality of Monaco. The actions of the RAMOGE agreement are aimed at:

– Preservation of ecosystems and biodiversity;

– Raising awareness of ethical practices among marine stakeholders and the general public;

– Optimizing the fight against sea pollution [11].

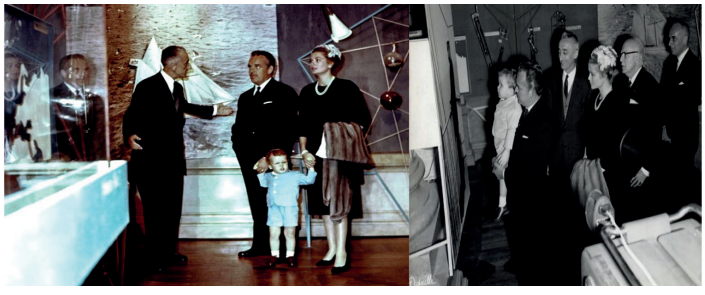
1996: Signature of ACCOBAMS (Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area), whose secretariat is in Monaco. The Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and contiguous Atlantic area (ACCOBAMS) is a **legal conservation tool b**ased on cooperation. Its purpose is to **reduce threats to cetaceans** notably by **improving current knowledge** on these animals. This **intergovernmental Agreement** provides the demonstration of the commitment of riparian Countries to preserve all species of cetaceans and their habitats within the geographical Agreement area [1].

- 1999: The PELAGOS agreement creates a sanctuary to protect marine mammals in the Mediterranean Sea. The Pelagos Sanctuary is the only international sea area dedicated to the protection of marine mammals and their habitats in the Mediterranean Sea. It was established by a Multilateral Agreement between France, Italy and Monaco signed in Rome in 1999, which came into force in 2002. Meanwhile, in 2001, the Pelagos Sanctuary was listed as a Specially Protected Area of Mediterranean Importance (SPAMI), under the Barcelona Convention [8].

- 1957 to 1988: Internationally renowned, Captain Cousteau, who was the director of the Oceanographic Museum for more than 30 years, revealed the beauty but also the fragility of the "Silent World" through images [10]. This revolutionary documentary was the first of its kind and was one of the first underwater documentaries to be shot in color. The Silent World was shot in the Mediterranean Sea as well as in the Persian Gulf, the Red Sea and in the Indian Ocean.

French oceanographer is world-renowned as a marine explorer and ocean conservationist, the future researcher Jacques-Yves Cousteau was born into a family of hereditary lawyers; his father worked for American billionaires who sponsor projects in universities and the scientific world. After moving to America, Jacques-Yves Cousteau and his brother Pierre quickly mastered English. Already at the age of 20, Cousteau, who had been interested in the sea since childhood, entered the Naval Academy and went around the world on a sailboat. The French oceanographer Jacques Cousteau is internationally renowned as a marine explorer and defender of the oceans. He has sailed all over the world on océanographie expeditions and has also written and produced films about the oceans. In 1957, Jacques Cousteau was appointed director of the Oceanographic Institute Institute in Monaco [3].

The yellow 'Submarine Anorep 1'
standing near the Monaco Oceanographic Museum, was built in 1966;
The Oceanographic Museum of Monaco
was founded by Prince Albert I in 1889.



1960 Oceanographic Museum – PrinceRainier, Princess Grace, Prince Pierre,
Prince Albert II and Jacques Cousteau.

On the pediment of the building of the world's oldest Oceanographic Institute in Monaco, the names of all the ships that performed outstanding feats in the service of the science of oceanography are written in gold letters. The museum building rises above the sea, as if growing out of a rock. The museum was founded by Prince Albert I in 1889. In 1906, it became home to the Institute of Oceanography. Jacques-Yves Cousteau served as the museum's unchanging director from 1957 to 1988. To this day, the place is sometimes called «the Cousteau Museum». Prince Rainier III who offered the Commander the opportunity to take over the Museum. Cousteau agreed without hesitation, moving to his famous study with large windows overlooking the sea. One of his great victories was an unprecedented increase in attendance. Back in those years, the museum was entertaining over a million visitors a year. These days these figures range from 600 000 to 700 000 people. The princely family has always keenly followed Cousteau's research. Even after the Commander's death, the Monaco sovereign carries on his scientific heritage. In 2018, Prince Albert II thus insisted that the museum open a section dedicated to the great explorers of Monaco. It also reveals sea expeditions by Albert I, nicknamed «the prince of the oceans», and Prince Rainier III's research in the field of marine ecology preservation [4].

Perpetuating the tradition initiated more than 100 years ago by Prince Albert Ist of Monaco to make people love, know, and protect the ocean, his great-great-grandson HSH Prince Albert II of Monaco puts the protection of the planet and particularly the ocean high on his agenda. Accordingly, he has instigated a flagship project for the Principality – Monaco Explorations – as a platform for his commitment to the knowledge, sustainable management, and protection of the ocean. The project was among the first set of international actions officially endorsed on World Ocean Day in June 2021 in response to the first call for actions of the UN Ocean Decade. The project comprises collaborative international expeditions combining scientific research, public outreach, and government cooperation through the transdisciplinary approach underpinned by sustainability science. It will investigate selected marine areas worldwide with the following objectives:

→ to understand through a multidisciplinary scientific approach the ecosystemic status and functioning of the area explored and to advise stakeholders;

→ to share the issues and knowledge with the greatest number of people through an ambitious outreach programme;

→ through diplomatic action to mobilize governments by providing information and analyses to support the sustainable management of the selected marine areas [2].

Famous scientists from many countries claim that the World Ocean is a pantry of food for the people of the future. They see in it an inexhaustible source of additional food resources that will be needed in the future to meet the needs of the rapidly growing population of the Earth. R. Revell said: "The Pacific Ocean is more fertile and potentially more productive than the

continents." His correctness is also confirmed by the presence in sea water of huge quantities of dissolved chemicals and mineral wealth lying at the bottom of the World Ocean. The sea soil is in some places covered with so-called nodules – "adhesions" of iron and manganese with other rocks. These nodules contain about 200 billion tons of high-grade iron and manganese ores. In addition, they contain cobalt, nickel, copper and other metals. To explore all these countless riches, more and more new methods of studying the sea depths were developed: seismoacoustics, gravimetry, hydroacoustics, hydrooptics, television [6].

Cousteau was not only an inventor, but also a romantic who dreamed that one day people would start living under water. The talented inventor converted the ship into a research oceanographic laboratory "Calypso", which became his home and "universe" for many years. "Calypso" turned into a home for another invention of Cousteau – a small underwater 2-seater boat "Denise". How many amazing dives to a depth of 370 m for scientific observations and filming were carried out on this strange diving saucer!

The mysterious ecosystem of the Earth: scientists still cannot explain the existence of a real tropical forest under water. Together with Captain Cousteau, we will take a break from civilization, enjoying untouched nature and the majestic beauty of the rich underwater world, swimming in a lake full of fragile jellyfish and swim next to four-meter manta rays and reef sharks, feeling like Robinson on the deserted beaches of uninhabited islands. Captain Cousteau introduced his first made-for-TV documentary, commissioned by ABC in 1966. The programme was so successful that the series was commissioned: the epic, decade-spanning odyssey of 'The Undersea World of Jacques Cousteau'. The team travels to the coral reefs of the Indian Ocean, an area teeming with animal and plant life, and where numerous complex relationships between different species are played out on a daily basis. This is a real "underwater Amazon" that has preserved the lost world of wild nature in the very center of the metropolis.

The equipment that would allow filming under water is also an invention of the French. To shoot underwater, Jacques-Yves Cousteau invented all the necessary equipment, including underwater cameras, underwater lights, video cameras and more. Cousteau created a system of underwater television. The underwater television system was quite complex: it consisted of underwater and surface parts, with the help of which the team could film the seabed at depth. Photographing the seabed at a depth of up to 7250 m. became one of the first achievements of Jacques-Yves Cousteau's team. The underwater part of the system included a television transmission camera, a light source, a photography unit and a stranded cable. The above-water part consisted of a video monitoring device, electrical power sources and a control panel. The underwater camera used special television underwater tubes capable of working in low-light conditions. He turned scientific research into an exciting show, making an invaluable contribution to its popularization. Captain "Calypso" was the first and most extensive explorer of the underwater world. The books written by him about the adventures

of the "Calypso" team immediately became bestsellers. Two of his films are "World of Silence" and "The World Without the Sun" was recognized as the best feature-length documentary film and received the highest film awards – the "Oscar" and the "Golden Palm Branch" of the Cannes Film Festival. "Team Cousteau's Underwater Odyssey" and his other series about around-the-world trips, research of the Arctic, Antarctic, the world's largest river systems – the Nile, the Amazon, the Mississippi – were watched by millions of TV viewers around the world...[13].

Near the east coast of Africa, in the western part of the Indian Ocean, is the amazing island-state of Madagascar, the place where Africa meets Oceania. In the central part of the island, surrounded by sacred hills, the capital of Madagascar – the city of Antananarivo, which arose almost three centuries ago, found its place. All over the world, this unique place is known for its diverse and amazing animal and plant life, many kilometers of sandy beaches and beautiful coral reefs. Masuala National Park, founded in 1997, located on the peninsula of the same name, is one of Madagascar's main projects to preserve the rich biodiversity of flora and fauna. In this region, you can observe the existence of various ecosystems – from high-altitude tropical forests to coral reefs. Numerous nature reserves, parks and bays – the landscapes and wildlife of these places are truly amazing. Here, in the summer from December to February, the air temperature can reach +35°C, at night – +25°C. In winter, from June to July, in the northwest, daytime temperatures are around +32°C, and at night around +23°C, further south, further from the equator, the air temperature decreases. Thus, in the south-east of the country, during the summer, the daytime temperature rises to +30°C, and the night temperature is about +22°C. In winter, daytime temperatures here are around +24 °C, at night – around +16 °C. Diving in these waters, you can get an unforgettable experience of observing about 250 different types of corals. These waters are home to many varieties of colorful fish, dolphins, sea turtles, whale sharks, as well as wonderful lathymerians – an ancient type of fish that is 70 million years old. However, caution should be exercised when diving in coastal waters, as these areas are home to a significant number of dangerous shark species. Swimming tourists could be accompanied by moray eels, lobsters, groupers, and sea turtles. Turtles are one of the oldest inhabitants of our planet. They remained the same as their ancestors 100-200 million years ago. All turtles are long-lived: 150 years is the normal age for a land turtle. It happens that they live 200 years or more.

There are sea turtles and those living on land. Turtles' enemies: large rodents, arthropods, birds of prey, crocodiles. Humans can also pose a threat to the turtle. People often throw away garbage, which turtles ingest and often get sick or even die. Or turtles get caught in fishing nets and can't get out. And they often die too. We must admit, that there are currently 230 species of turtles in the world, and the oldest turtle in the world is 182 years old.

The sea water here is absolutely transparent, and even from a height of several tens of meters you can see how far below turtles and sharks swim. The island of *Europa*, in the Mozambique Channel between Africa and Madagascar, is the foremost breeding ground of the mysterious sea turtle. The crew's cameras follow the turtles' mating rituals, the females' labored journey up the beach to lay their eggs, and the fight for the survival of the newly-hatched babies. The Calypso crew films the undersea mating dance and subsequent egg-laying of the sea turtle. Film was called "Search in the Deep" (April, 1968) [wiki].

Then we start to travel to the coasts of Madagascar and California to study whales, sperm whales and killer whales, observing their migratory habits in the film "Whales"(November, 1968)**.** In the morning, they will continue their journey through the islands of the archipelago. We will see coral reefs in local bays. We will meet the evening on the veranda, admiring the sea and listening to the singing of birds of paradise in the nearby forest. A complete separation from civilization awaits us!

One month later we will continue our journey with the divers, traveling inland to Peru's Lake Titicaca, testing experimental techniques for diving at high altitude for the first time. At an altitude of 3812 meters above sea level, on the Altiplano plateau, where there is a mysterious lake of amazing beauty. Titicaca is the second largest in area (8,372 sq. km.) and the first in terms of water volume in South America. Due to the fact that the lake can be considered a closed reservoir, and a huge amount of sewage from both countries is dumped into it, an environmental disaster may soon befall it. The route is not easy in terms of physical exertion! It is not known for certain where this name came from. There are two popular versions:

1. Derived from two words in the Quechua Indian language: titi (translated as "puma") and caca (translated as "stone"). From a bird's eye view, the shape of the lake resembles the outline of a puma.
2. The second option is not so romantic and means "tin field" – thus it rather reflects the special color of the water in the lake.

Due to a number of specific properties, Lake Titicaca is sometimes called the twin of Baikal. More than 300 rivers flowing from glaciers flow into it, but only one flows out – Desaguadero (Río Desaguadero, dewatering). Picturesque nature surrounds this incredible lake. The clean air in these places is intoxicating, the crystal clear sky is reflected in it as in mirrors, and attracts the gaze of even the most experienced traveler. The lake is

surrounded by ancient legends. For centuries, legends about giant structures hidden under water have been passed down by word of mouth. There are myths about countless Inca treasures hidden from the conquistadors in its depths. Perhaps many of them are designed for tourists flocking here from all over the world, but this cannot reduce interest in the reservoir. Agree, we are not talking about legends, but about the natural splendor of the Andes and mountain Lake Titicaca, that is in a hurry to reveal the secrets, expecting new inquisitive explorers, like the Calypso crew with its wonderful captain Cousteau. Cousteau's divers investigate the lake's legend of Inca treasure in their films such as "Sunken Treasure" (March, 1969) and "The Legend of Lake Titicaca"(April, 1969) [14].

The crew sets out on a treasure hunt to the Caribbean in search of the wreck of La Nuestra Senora de la Concepcion, a Spanish ship that sank over 300 years ago carrying more than $2m in silver and gold. Let's join crew too!

This ship has earned a place in maritime history not only by virtue of being Sir Francis Drake's most famous prize, but also because of her colourful nickname, ***Cagafuego*** ("fireshitter"). *Nuestra Señora de la Concepción* was reportedly nicknamed *Cagafuego*, meaning "shitfire" (or "fireshitter"), by her Spanish sailors. At the helm of his ship the Golden Hind, Sir Francis Drake had slipped into the Pacific Ocean via the strait of Magellan in 1578 without the knowledge of the Spanish authorities in South America. Privateers and pirates were common during the 16th century throughout the Spanish Main but were unheard of in the Pacific. Accordingly, the South American settlements were not prepared for the attack of "el Draque" (Spanish pronunciation of Sir Francis' last name). During this trip, Drake pillaged El Callao (Peru's main port) and was able to gather information regarding the treasure ship Cagafuego, which was sailing toward Panama laden with silver and jewels [7]. This sea legend, full of mysteries and all sorts of puzzles, is similar to a pirate saga «Pirates of the Caribbean», where the desperate and eccentric pirate captain Jack "Sparrow" is at the center of the story. He's not going through the best of times, because Jack is being hunted by the British Navy, and in addition, Sparrow's ship "The black pearl" has disappeared with the crew! And "As long as we manage to put the pieces of history together, I am definitely considering this opportunity" to return to the search for the Baby Dutchman, becoming his captain! Cousteau's divers investigate the lake's legend of Inca treasure. The treasure proves to be illusory, but ancient pottery and a unique species of aquatic frog are found.

After more than 140,000 nautical miles traveled aboard the Calypso, and having shot around two million feet of film, Cousteau shares his personal thoughts on the challenges they face filming the infinite phenomena of «The water planet» (March,1970). Cousteau presents a behind-the-scenes look at the motivations and challenges driving his crew [15].

Cousteau used scientific observations to lend authority to his passionate advocacy as a storyteller who was not afraid to say what needed to be said, even if it was unpopular. He did not seek to please, he sought to live more fully. What appealed most was that he was not an "unbiased scientist"

who denied his own emotional response and peddled cool hard data like a bureaucrat detached from real results.

With the arrival of Prince Rainier III in 1949 the importance of philatelic issues of the principality increased. During his reign, the prince was personally involved in all aspects of the design and format of the principality's philatelic issues, and he was quoted as saying that the stamps were the country's "best ambassador"[9]. The prince was a famous philatelist, and his collection formed the basis of the Museum of Stamps and Coins of Monaco. Many stamps have designs that illustrate various aspects of oceanography. In 2015 was traditionally honored the memory of Captain Jacques Cousteau on the occasion of the 105th anniversary of the outstanding navigator in the stamps of the Principality:

A true citizen of the world, Jacques-Yves Cousteau founded the World Confederation of Underwater Activities (CMAS). He devoted his entire life to the protection of the Earth's natural resources. He actively advocated for the protection of the world's oceans: in the 1960s, he organized a public action against the disposal of radioactive waste in the Mediterranean Sea and was an ardent supporter of the introduction of a moratorium on whaling. For his activities, Jacques-Yves Cousteau was awarded many international awards: Commander of the Legion of Honor, Knight of the Grand Cross of the National Order of Merit, Commander of the Order of Arts and Letters, but most of all he appreciated the recognition of ordinary people around the world [4].

He was a pioneer in cinema as well as an innovator in underwater research technology, making him a rare marine conservationist – a man who could fill cinemas. He reminded generations that we are all in the same boat – we must all become guardians of the sea to save it… He was genuine and brave. We need more people like him! [13].

Conclusion. The greatest museum of antiquities – that's what the Mediterranean Sea was once called. "Everywhere my gaze reached," wrote Victor Hugo, "from west to east, from Cape Antibes to Cape Roux, this great, worshipful sea stretched out, which had seen the entire history of mankind – from the fleets of King Solomon to the armies of Hannibal, from the galleys of Pompey to Napoleon's barque... The Mediterranean Sea was conducive to civilization, it is a famous, radiant sea, all corners of which are illuminated by history and the sun. Many great deeds have happened on its shores, and the

shores remember this." In the lives of future generations, in their complex economy, the ocean will occupy an extremely important place. To bring this time closer, they go on a search – often long, dangerous – underwater expeditions. Science begins to occupy the initial stages of the World Ocean offensive.

Thus, without any special education or scientific degrees, Cousteau became the first explorer of the World Ocean. The researcher left a legacy of many books, dozens of films, translated into many languages of the world. Jacques-Yves Cousteau saw the bottom of the World Ocean as no one had ever seen it before.

In particular, in 1973, the "Team Cousteau" foundation was created, which was engaged in oceanographic research and environmental protection. The legendary "Odyssey of Team Cousteau" – a series of documentaries about the underwater world – is known on all continents of the earth! Life in the seas and oceans has become closer to people, thanks to his works.

Results. Jacques Cousteau's heritage:

✓ Jacques-Yves Cousteau was granted a number of prestigious international film awards: 3 Oscars and 1 Cannes Film Festival Golden Palm. Cousteau's book "In the world of silence" sold more than 5 million copies and was translated into 22 languages. The film with the same name in 1957 received the Oscar as the best documentary film, but the researcher did not limit himself to one award. "In a World of Silence" also won the top prize at the Cannes Film Festival, something no documentary has achieved in the festival's 48-year history. The second "Oscar" Cousteau-producer received for the best feature short film "The Story of a Goldfish" (1960), and the third – for the best documentary full-length film "A World Without Sun".

✓ In 1947, Cousteau set a world record for a 300-feet scuba dive.

✓ He was awarded the U.S. Presidential Medal of Freedom in 1985.

✓ Jacques-Yves Cousteau has released over 120 films in total.

✓ A 1990 Cousteau Foundation petition banned mining in Antarctica with the aim of preserving the continent exclusively for scientists and tourists.

✓ Cousteau's yellow bathyscaphe is installed at the Oceanographic Museum entrance in Monaco.

✓ Jacques Cousteau – director of the Oceanographic Institute in Monaco.

✓ The Order of the Legion of Honor is the highest recognition of special services to France.

✓ Cousteau's recognizable red knitted cap is not just his distinctive trait, but a necessity for any diver to avoid hypothermia.

✓ The documentary *Becoming Cousteau* (2021) focuses on his life and work [2, 3,4,13].

Interesting facts. Diving and wrist watches have gone hand-in-hand in a big way ever since the rise of SCUBA diving in the mid-20th century. Where diving was incredibly difficult for timepieces years prior, new wars and human exploration saw innovations in underwater capability regarding the horological industry. With time, many well crafted pieces ended up on some very famous wrists. Combining the future of dive watches with the future of

diving – with acclaim to boot – was **Jacques-Yves Cousteau** (1910-1997). His legacy of exploration, film making, and oceanography is synonymous with maritime discovery. By the 1970s the three main watches **Cousteau** and his team preferred were of Omega, Rolex, and Doxa origin. During this decade, Rolex and Doxa worked together to engineer the first wristwatches with a helium release valve. These release valves on dive watches revolutionized the durability/longevity of **diver watches**. After much careful research, we believe the Rolex Submariner Jacques-Yves Cousteau is wearing in the photo above and below could be an early Rolex prototype Submariner. Jacques-Yves Cousteau was close friends with Rene-Paul Jeanerrete who in 1953 was the Director of Rolex Geneva. Rene-Paul Jeanerret was the man at Rolex who came up with the idea of dedicated tool-watches. In 1954 Rolex introduced the Rolex Submariner at Basel Fair, but we believe Jacques-Yves Cousteau was testing an advanced prototype Submariner models aboard the Calypso for Rolex, it is likely, that Jacques Cousteau's career achievements inspired Rolex to develop the Rolex Submariner diving watch model. IWC Schaffhausen and Jacques-Yves Cousteau share not only a spirit of technological innovation and a passion for excellence, but also a commitment to preserving the environment. The "Expedition Jacques-Yves Cousteau" watch model is dedicated to the legendary French traveler and explorer of the World Ocean, in honor of the journey made by the conqueror of the oceans in 1971 to the Galapagos Islands. Ocean explorer, scientist and director Jacques-Yves Cousteau called the Galapagos Islands the last natural shrine. For the filming of the famous television series "The Ocean and Its Secrets" in the 70s of the twentieth century, he visited the archipelago more than once. With his film "Galapagos Dragons," Jacques-Yves introduced millions of people to the mysterious sea lizards. In 1973, he founded the Cousteau Society, a non-profit organization whose purpose was to protect marine wildlife [12].

Since 2004, IWC has been a partner of the society and supports it in the organization of marine protection zones. *This is one of the most effective ways to prevent overfishing, poaching and environmental destruction!* The Aquatimer Chronograph Edition "Expedition Jacques-Yves Cousteau" with a traditional blue dial is the sixth special edition of the watch named after the famous Frenchman. The design of the watch is similar to the Aquatimer Chronograph and has all the characteristics of a diver's watch required for

expedition travel. The watch is ideal for diving: it has a stainless steel case, an automatic caliber 79320 movement, a rotating bezel and a SafeDive system. The watch dial is blue and the seconds hand is tipped in coral red, reflecting Cousteau's love of coral. The watch's caseback is engraved with a portrait of the famous oceanographer and "captain" wearing his signature woolen headdress. A portion of the proceeds from the sale of the watch will be donated to the Cousteau Society to support tireless environmentalists.

Wishes. More willing using plain language to support ocean health policy in publishing junior scientist's guides of school ages for understanding complex systems like the difficulties of the ocean. Introduction of scientific circles in schools with teaching the basics of scientific research. teach how to work with literary sources, identify the main author's idea and the researched position, determine relevance, purpose and tasks, create scientific presentations (reports) and teach how to prove the presented tags. After all, educators, mentors, instructors, teachers, whatever they are called, have been with us since we were no higher than a stack of textbooks and were easily lost in the sea of desks. They perform one of the most difficult and terrifying, demanding jobs with the sacred responsibility of instilling lifelong knowledge in their students. They build the foundation during each child's formative years, shaping the way children perceive the world – an extremely unrelenting, exhausting role that requires an uncompromising heart! As the proverb says, that – "teachers are the one and only people who save nations!"

Acknowledgments: CSM Directorate, N. Hilmi and G. Nataloni!

References:

1. Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and contiguous Atlantic area (ACCOBAMS). Aviable by: https://accobams.org/about/introduction.
2. Calcagno R, G Bessero G. Monaco Explorations Ocean Decade Project. Marine Technology Society Journal, 56 (3), 2022, p. 124-125 URL: http://surl.li/puwbbt.
3. Institut océanographique. URL: http://surl.li/hjxrbw.
4. Jacques – Yves Cousteau: «I am the sea. And the sea is me». Hello Monaco, 22/01/2021 URL: http://surl.li/gifdyq.
5. Kalashnik N. 20,000 Leagues Under the Water. European Socio-Legal & Humanitarian Studies, № 2 (2024).
6. Linde G. In die Vergangenheit getaucht Archäologen forschen nach Schiffen und Städten auf dem Meeresgrund / Günter Linde, Edmund Brettschneider. – Leipzig : Brockhaus, 1964. – 244 p.
7. Nuestra Señora de la Concepción. URL:http://surl.li/nakpq = Cordingly, David. Under the Black Flag: The Romance and the Reality of Life Among the Pirates New York, Random House, 1995. URL: http://surl.li/naxcs.
8. Pelagos agreement. URL:http://surl.li/pogsce.
9. Postage stamps and postal history of Monaco/Wikipedia. URL: https://en.wikipedia.org/wiki/Postage_stamps_and_postal_history_of_Monaco.

10. Prince Renier III. The ocean revealed. Aviable by: https://www.oceano.org/en/organization/the-great-figures/prince-rainier-iii.
11. Ramoge agreement, 2024. URL: https://ramoge.org/en.
12. Rolex's Conquest Of The Ocean/ 27/07/2007. Aviable by: http://surl.li/hrnfqh.
13. Sara Nason. More Jasques Cousteau's Please! Aviable by: http://surl.li/naxot.
14. The Legend of Lake Titicaca. https://www.boliviabella.com/legend-of-lake-titicaca.html.
15. Wikipedia. The Undersea World of Jacques Cousteau. Aviable by: http://surl.li/naxcs.