disorders, heavy metal poisoning. Tannins are not toxic and many of them have P-vitamin activity.

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HOW POLLUTION IS CHANGING THE OCEAN'S CHEMISTRY

When carbon dioxide (CO2) is absorbed by seawater, chemical reactions occur that reduce seawater pH, carbonate ion concentration, and saturation states of biologically important calcium carbonate minerals. These chemical reactions are termed "ocean acidification" or "OA" for short. Calcium carbonate minerals are the building blocks for the skeletons and shells of many marine organisms. In areas where most life now congregates in the ocean, the seawater is supersaturated with respect to calcium carbonate minerals. This means there are abundant building blocks for calcifying organisms to build their skeletons and shells. However, continued ocean acidification is causing many parts of the ocean to become unsaturated with these minerals, which is likely to affect the ability of some organisms to produce and maintain their shells [1].

Since the beginning of the Industrial Revolution, the pH of surface ocean waters has fallen by 0.1 pH units. Since the pH scale, like the Richter scale, is logarithmic, this change represents approximately a 30 percent increase in acididy. Future predictions indicate that the oceans will continue to absorb carbon dioxide, further increasing ocean acidity. Estimates of future carbon dioxide levels, based on business as usual emission scenarios, indicate that by the end of this century the surface waters of the ocean could have acidity levels nearly 150 percent higher, resulting in a pH that the oceans haven’t experienced for more than 20 million years.

The Biological Impacts. Ocean acidification is expected to impact ocean species to varying degrees. Photosynthetic algae may benefit from higher CO_2 conditions in the ocean, as they require CO_2 to live just like plants on land. On the other hand, studies have shown that lower environmental calcium carbonate saturation states can have a dramatic effect on some calcifying species, including oysters, clams, sea urchins, shallow water corals, deep sea corals, and calcareous plankton. Today, more than a billion people worldwide rely on food from the ocean as their primary source of protein. Thus, both jobs and food security in the U.S. and around the world depend on the fish and shellfish in our oceans [2].

Ocean Acidification: An Emerging Global Problem Ocean acidification is an emerging global problem. Over the last decade, there has been much focus in the ocean science community on studying the potential impacts of ocean acidification. Since sustained efforts to monitor ocean acidification worldwide are only beginning, it is currently impossible to predict exactly how ocean acidification impacts will cascade throughout the marine food chain and affect the overall structure of marine ecosystems. With the pace of ocean acidification accelerating, scientists, resource managers, and policymakers recognize the urgent need to strengthen the science as a basis for sound decision making and action.

What are the effects on human societies? Changes in marine ecosystems will have consequences for human societies, which depend on the goods and services these ecosystems provide. The implications for society could include substantial revenue declines, loss of employment and livelihoods, and other indirect economic costs. Socioeconomic impacts associated with the decline of the following ecosystem services are expected: • *Food*: Ocean acidification has the potential to affect food security. Commercially and ecologically important marine species will be impacted, although they may respond in different ways. Molluscs such as oysters and mussels are among the most sensitive groups. • *Coastal protection*: Marine ecosystems such as coral reefs protect shorelines from the destructive action of storm surges and cyclones, sheltering the only habitable land for several island nations. • *Tourism*: This industry could be severely affected by the impacts of ocean acidification on marine ecosystems (e.g. coral reefs). • *Carbon storage and climate regulation*: The capacity of the ocean to absorb CO_2 decreases as ocean acidification increases.

More acidic oceans are less effective in moderating climate change. But ocean acidification can also affect the propagation of contaminants through the marine environment, changing their bioavailability and intensifying exposure and bioaccumulation. For example, mercury and some metals (such as aluminum, iron, lead or copper) are often more bioavailable in acidified aquatic habitats. It also modifies the abundance and chemical composition of harmful algal blooms, increasing shellfish toxicity. Other ways in which ocean acidification affects human health is through an increase in respiratory issues, disruption of nature-based recreational activities, or loss of potential medical new resources. Research in this field is essential and urgent in order to understand the full scale and risks of ocean acidification to human health and wellbeing, and to anticipate and monitor such changes, adapting to them.

Conclusion. Ocean acidification is anticipated to drive complex changes in the occurrence of individual species and ecological infrastructure from which human health and wellbeing benefit. Subsequent changes to human health and well-being can result from modifications to the food supply and food quality, respiratory issues, mental and physical health, and the treatment of diseases occurring due to acidification.

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DARYA DOMRACHEVA

To start with, if I were to ask the audience to call the most famous athlete of Belarus, everyone would probably name Daria Domracheva. I believe that Daria Domracheva has made a huge contribution to the development of sports in our country. Thanks to her, the whole world knows about a small country called Belarus. Therefore, I want to dedicate my article to the biography of this celebrated person.

Daria was born on August 3, 1986 in Minsk in a family of architects. When she was 4 years old, the family moved to Siberia.

Domracheva's parents were invited as architects to build the young city of Nyagan. Daria was a very active child and her parents sent her to various workshops, but only biathlon came to her liking. Being a junior, Dasha acted in various competitions, winning prizes in European and world competitions. Dasha became a part of the Russian team, but received an in-