MULTILINGUAL LEXICON OF UNDERSEA FEATURES

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Abstract

The department prepares a multilingual lexicon of undersea feature types with the purpose to make information on configuration of the seafloor and undersea feature types available for the general public interested in geographical sciences. We discuss the undersea feature types following mainly the system created by the IHO. However, some of these categories include features of substantially different size and origin. For example, the category *ridge* includes mid-ocean ridges and ridges tens of kilometres long; as well as active mid-ocean ridges, fossil mid-ocean ridges, fragments of continents and mountain ranges consisting of volcanic cones. Our intended multilingual lexicon will publish the officially accepted terms and definitions of each undersea feature category in various languages. This will be complemented with hypsometric maps representing a typical example of each category. Features of the same category, but of various origin, will be represented on separate maps. Important details will be represented on large-scale maps.

Text

Hungary joined the scientific investigation of the Adriatic Sea right before the beginning of World War I, in 1913. Within a short period, during 1913 and 1914, four expeditions to the Adriatic Sea were prepared. Only two of them got accomplished: the first (autumn) expedition in October and November 1913, and the second one in spring of 1914. The research expeditions intended for August and December 1914 were cancelled due the outbreak of the war.

Hungary, having lost its exit to the sea because of the 1920 peace-treaty of Paris/Versailles, provides a good example, how the community of researchers and teachers of a country, experts in geographical sciences, lose interest because of such a tragic event: updating and amplifying geographical and cartographical knowledge related to oceans and seas may fall out of the centre of interest for several decades.

Nowadays, a consequence of political changes during the last fifteen or twenty years, there are more than 40 countries without direct exit to the sea. Researchers living in these countries cannot take part directly in marine research, apart from the few exceptions of international cooperation. However, we must realize that collection, systemization and synthesis of theoretical knowledge related to seas, in order to help *practical cartographers* representing marine areas on maps, involve several branches of science; this work can be utilized in the education of cartographers as well as in the training of students in other fields of geosciences, such as future geographers, teachers of geography, geologists, geophysicists, hydrologists, *potential map users interested in geosciences*.

However, the technical language used by researchers in various countries — especially by those who can attain modern knowledge on seas only indirectly — and creation of new terms when adopting scientific results are not negligible.

These considerations encouraged the authors of this paper to assemble the English—Hungarian version of *Standardization of Undersea Feature Names*. The first version was presented to the Commission on Marine Cartography of the International Cartographic Association in Beijing in 2001. Its second, enlarged and revised version was also presented to this Commission in Durban in 2003.

Standardization of Undersea Feature Names is an important publication not only for professionals in countries pursuing intensive marine research, but for every geoscientist in any country, including countries possessing no marine areas. This publication helps them to construct new geographical names conforming to existing names of undersea features used worldwide as well as to characteristics of their national languages. This can be illustrated through the names of an undersea featue in the Arctic Ocean:

Lomonosov Ridge, ridge, 88°00’N 140°00’E, [English]

Lomonoszov-hátság [Hungarian]
хребет Ломоносова [Russian – Cyrillic]
chrebet Lomonosova [Russian – Latin]
Harris or Lomonosov Ridge [English, variant]
Harris Ridge [English, variant]
Lomonossowrücken [German]
Lomonosovův hřbet [Czech]
хребет Ломоносова [Russian]

As shown above, geographical names usually consist of two elements: a *generic term* and a *specific term*.

The generic term is a short, non-descriptive geographic term that refers to the category of the undersea feature (in our example, *hátság, ridge, chrebet* is a generic term). According to grammatical peculiarities of the given language, it can be the first part of the name (as in Russian) or the last one (as in Hungarian or in English), or it can be written in one word with the specific term (as in German).

The specific term can be very diverse. Rules of translating specific terms also differ according to various name types, so in some cases their international standardization can be very problematic.

Both the English—Hungarian version of *Standardization of Undersea Feature Names*, accomplished earlier at the Department of Cartography and Geoinformatics of the Eötvös Loránd University of sciences and the *Multilingual Lexicon of Undersea Features* being now prepared deal with the generic terms of geographical names.

More than two decades of Hungarian scientific research on cartographic representation of seas and undersea relief and our experiences during the preparation of the English—Hungarian version of *Standardization of Undersea Feature Names* led us to the idea that accomplishing a paper with the title ***Multilingual Lexicon of Undersea Features*** and publishing it on the Internet or on CD should be useful especially for researchers in countries that do not possess marine areas and have not published yet the *Standardization of Undersea Feature Names* in their own languages. This publication should contain the definition and the appropriate generic term for each undersea feature category in the most important languages, and should also represent typical examples of them on detailed hypsometric maps. This representation should be similar to that of the *International Tectonic Lexicon* (Dennis, J. G.—Murawski, H.— Weber, K., Editors; E. Schweizerbart'sche Verlagsbuchhandlung, Stuttgart, 1979).

We intend to discuss undersea feature types following mainly the system created by the International Hydrographic Organization. However, we must emphasize that undersea feature categories used by the IHO do not correspond completely to the variety of seafloor relief, as features of substantially different size and origin may be classified in the same category.

For example, the category *ridge* includes mid-ocean ridges (Atlantic Ridge) measuring thousands of kilometres and smaller ridges hundreds or tens of kilometres long; this category also includes active mid-ocean ridges, fossil mid-ocean ridges where seafloor spreading has ceased (Mendeleyev Ridge), fragments broken off from continents (Lomonosov Ridge) and undersea mountain ranges consisting of volcanic cones produced by hot spot activity (Walvish Ridge). Ridges also differ in relief depending on the velocity of seafloor spreading (Figure 1).

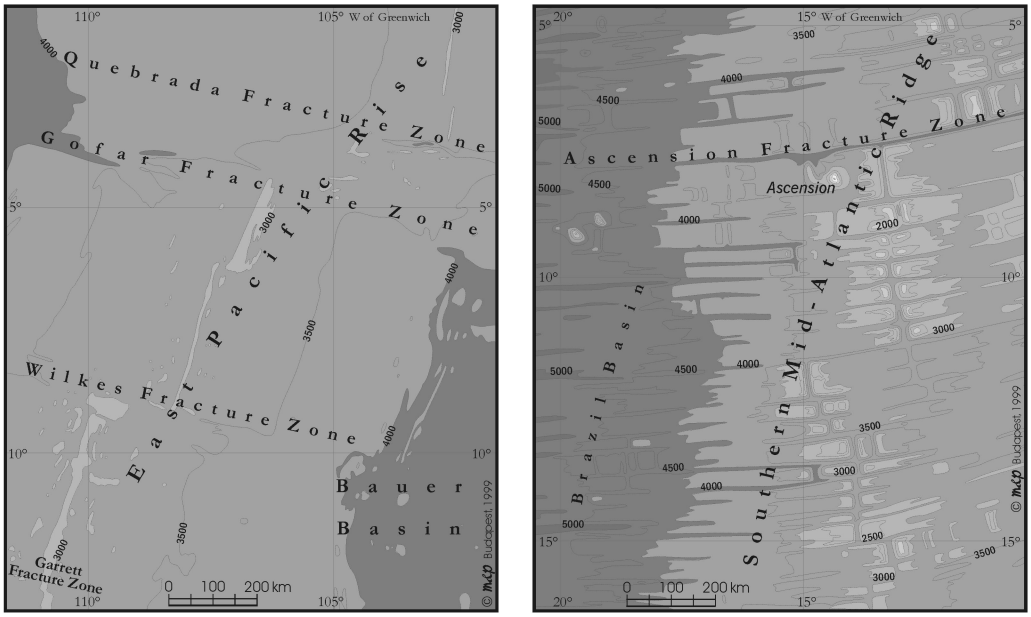

Figure 1.: Relief of mid-ocean ridges in the case of fast (left) and slow (right) sea-floor spreading. After GEBCO.

There are several other examples of categories including substantially different features. The category *seachannel* includes valley-like features in abyssal plains, produced by deep-sea currents, turbidity current channels on the surface of submarine fans as well as former river-beds transgressed by sea.

Submarine fans or cones may differ in shape because of their different position. The Amazon Cone, situated in an open ocean, can spread in all directions, what leads to a symmetrical conical shape. The Ganges Fan, confined in the Bay of Bengal, took a totally different shape (Figure 2).

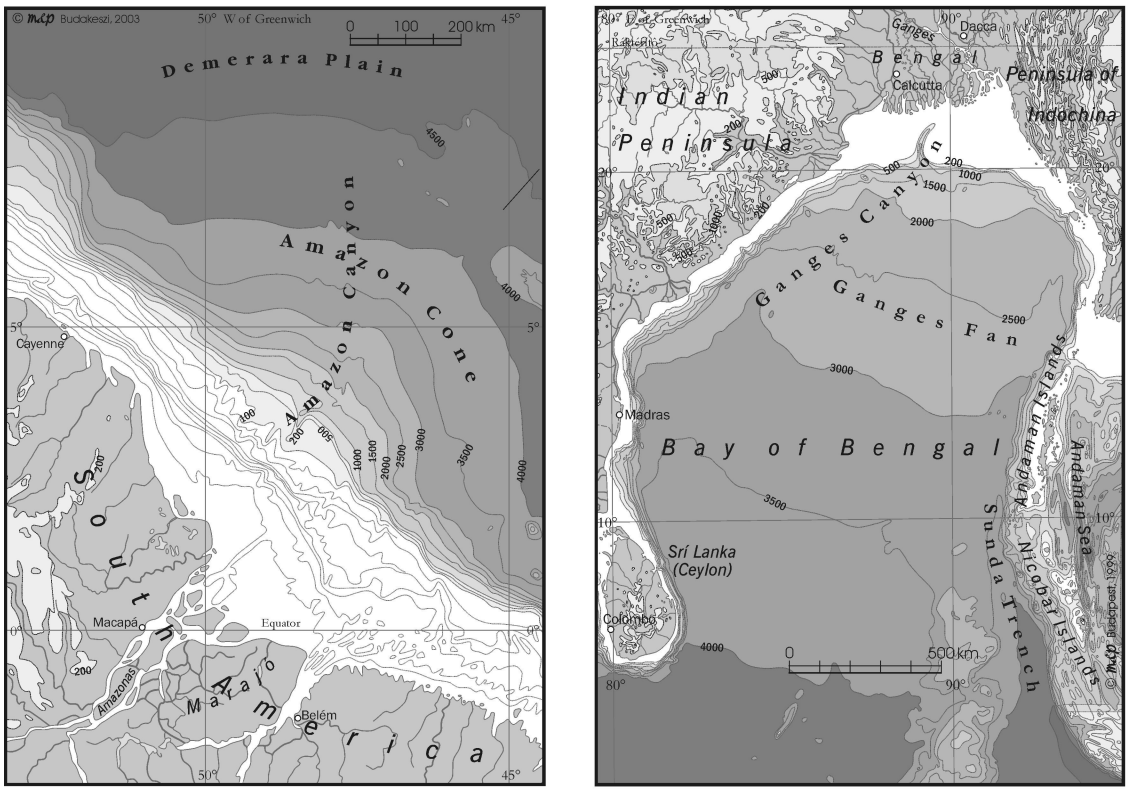

Figure 2.: Submarine fans in an open ocean and in a closed bay. After GEBCO.

Our intended multilingual lexicon will publish the officially accepted terms and definitions of each undersea feature category in various languages (English, French, Spanish, Russian), as well as appropriate Hungarian terms and definitions assembled by ourselves. For example:

Language	**Term**	**Definition**
English	Fan Cone	A relatively smooth, fan-like, depositional feature normally sloping away from the outer termination of a canyon or canyon system.
French	Cône *Cône sous-marin	Elément sédimentaire de forme générale conique, à faible pente, situé généralement au voisinage du débouché inférieur d'un canyon.
Spanish	Abanico submarino *Cono submarino *Cono	Cuerpo sedimentario en abanico, de contornos relativamente suaves, extendido en declive a partir de la desembocadura de un cañón submarino o sistema de cañones submarinos.
Russian	Конус выноса Конус *Глубоководный конус *Глубоководный конус выноса *Подводный конус *Подводный конус выноса	Относительно выровненная, веерообразная аккумулятивная форма полого спусающаяся от внешнего окончания каньона или системы каньонов.
Hungarian	Hordaléklejtő Hordalékkúp	Viszonylag sima felszínű, legyezőszerű, üledékből álló képződmény, amely általában valamely kanyon vagy szurdokrendszer nyílt tenger felé eső, külső végéhez illeszkedik.

Table 1.: Definitions of *fan* in various languages

These definitions should be complemented with detailed hypsometric maps representing a typical example of each undersea feature category (Figure 2).

If a given category (such as *ridge*) includes features of various origin also different in their relief pecularities, a separate map should represent each subcategory. If an undersea feature typically includes important details that cannot be represented at the same scale (for example, topography of mid-ocean ridges), these details may be shown on further maps.

We intend to publish our results on the World Wide Web.

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