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A Compiled Synoptic Table of the Standard Microfacies and Facies Zone System of Flügel (2010): A Practical Tool

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ABSTRACT: A synoptic table, compiling the most important information of Flügel's (2010) [1] complex standard microfacies and facies zone system, is shared with the public. On one page, it contains all standard microfacies (SMF) types, all facies zones (FZ) and which SMFs are associated with which FZs. This table provides the user with a quick and convenient reference/overview, serving students and professionals as an effective teaching/learning and research tool.

Keywords: Overview; Quick reference; Rimmed tropical carbonate platform.

جدول شامل مُجمَّع للسحنات الدقيقة القياسية ونظام منطقة السحنة من فلوجل (2010): أداة عملية

فرانك مارتن

الملخص: يتم مشاركة العامة بجدول شامل يجمع أهم المعلومات من فلوجل (2010) [1] الخاصة بالسحنات الدقيقة القياسية المعقدة ونظام منطقة السحنة. صفحة واحدة تحتوي على جميع أنواع السحنات الدقيقة القياسية (SMF)، وجميع مناطق السحنة (FZ)، وأي السحنات الدقيقة مرتبطة بأي مناطق السحنة. سيوفر هذا الجدول للمستخدم مرجع / استعراض عام سريع وملائم، يخدم الطلاب والمهنيين كأداة تعليم / تعلم وبحث فعالة.

الكلمات المفتاحية : مراجعة عامة؛ مرجع سريع؛ منصة كربونات استوائية؛ نموذج .

1. Introduction

In 1975, James Lee Wilson [2] published his book *Carbonate Facies in Geologic History*, which was printed seven times by 1986. One of the main features of this book is figure XII-1, redrawn in excerpts (Fig. 1). It depicts the names and numbers of all nine facies zones (facies belts) associated with a rimmed tropical carbonate platform as well as the names and numbers of all 23 standard microfacies (SMF) types associated with each facies zone (FZ).

Wilson's (1975) [2] concept of facies zones and SMF was further developed by Flügel (2010) [1]. In his book *Microfacies of Carbonate Rocks*, he not only subdivided both FZs 1 and 9 into A and B, but also increased the number of FZs to ten by adding the zone of "meteorically affected carbonate rocks". He also raised the number of SMF types to 26 and distinguished numerous variants. In addition, he updated the names of both FZs and SMF types.

A COMPILED SYNOPTIC TABLE OF THE STANDARD MICROFACIES AND FACIES ZONE SYSTEM OF FLÜGEL

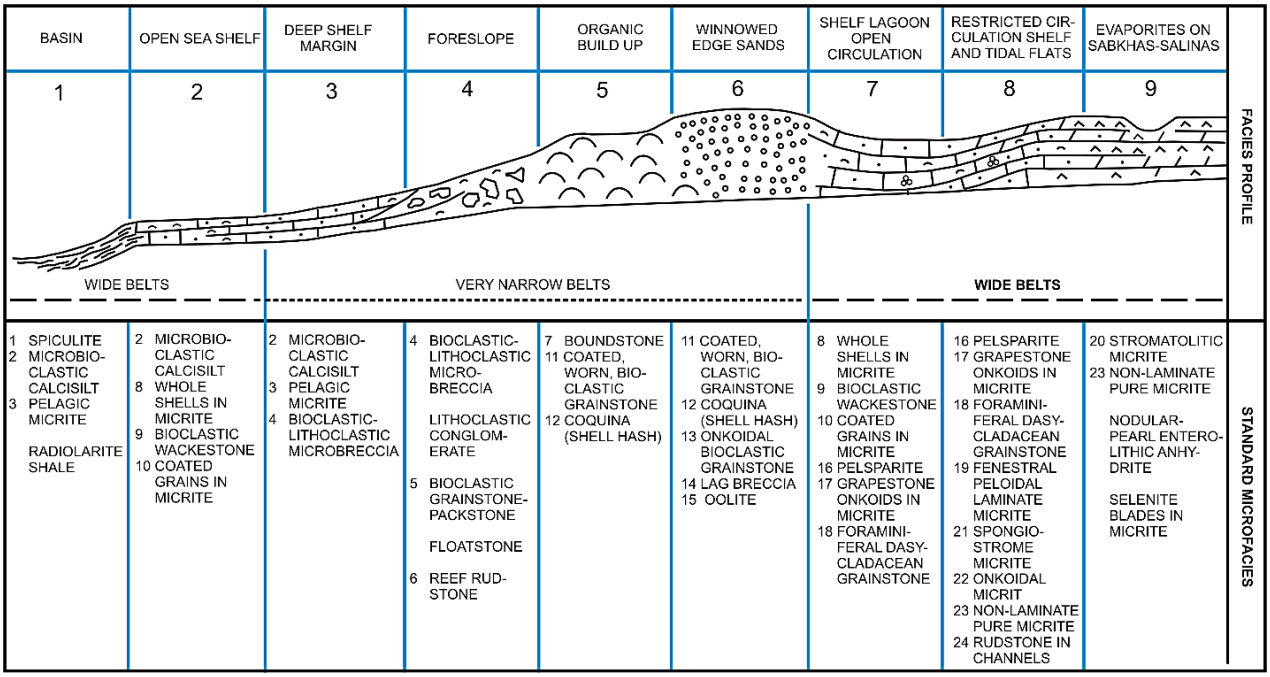

Figure 1. Excerpt of Wilsons's (1975) [2] figure XII-1, showing the nine FZs (facies belts) and their associated SMF types. Redrawn.

While [2] (Wilson, 1975 Fig. XX-1) produced a handy synoptic diagram for quick reference at one glance, summarizing the different facies zones and their associated SMF, no equivalent diagram is provided in [1] although the book, in general terms, hosts a trove of excellent illustrations. Instead, one has to laboriously piece together the corresponding information. The facies zones are illustrated, numbered, named and defined on pages 662 and 663. The revised SMF types are listed with their names and numbers on page 681.

Which SMF types are assigned to which FZs must be gathered from pages 682 to 716. Obviously, this is of limited practicality and has the potential to make some people hesitant to use the advanced system of [1], while at the same time, it keeps the model by [2], which "has passed the test of time" [1], more attractive.

To make the work of geoscientists and students easier, the author compiled the above-mentioned information from [1] (pages 662-663, 681-716) and summarized it as much as possible in a "Wilson-style" overview diagram (Fig. 2). The new figure should allow the users to access key facies distribution information quickly and conveniently. Thus, the author has reason to believe that it could encourage students and geoscientists to use the advanced system of [1] more frequently. The new figure also facilitates a direct comparison of the original and the updated model. For the application of Figure 2 and numerous illustrated examples and case studies, the reader is referred to Flügel (2010).

2. Result

Figure 2 is a synoptic compilation of Flügel's (2010) [1] revised Wilson (1975) [2] model, showing all facies zones and associated SMF types for a rimmed tropical carbonate platform, using the updated terminology. It is not feasible to create the perfect analogue of Wilson's (1975) [2] original design as the new SMF names [1] are too numerous and too long for it to be possible to place them all in a readable way into the vertical columns of the microfacies scheme. Still, it was possible to place the most important information into one diagram (Figure 2). For definitions of the FZs and well-illustrated examples of SMF types, see [1] (pages 662-663, 682-710).

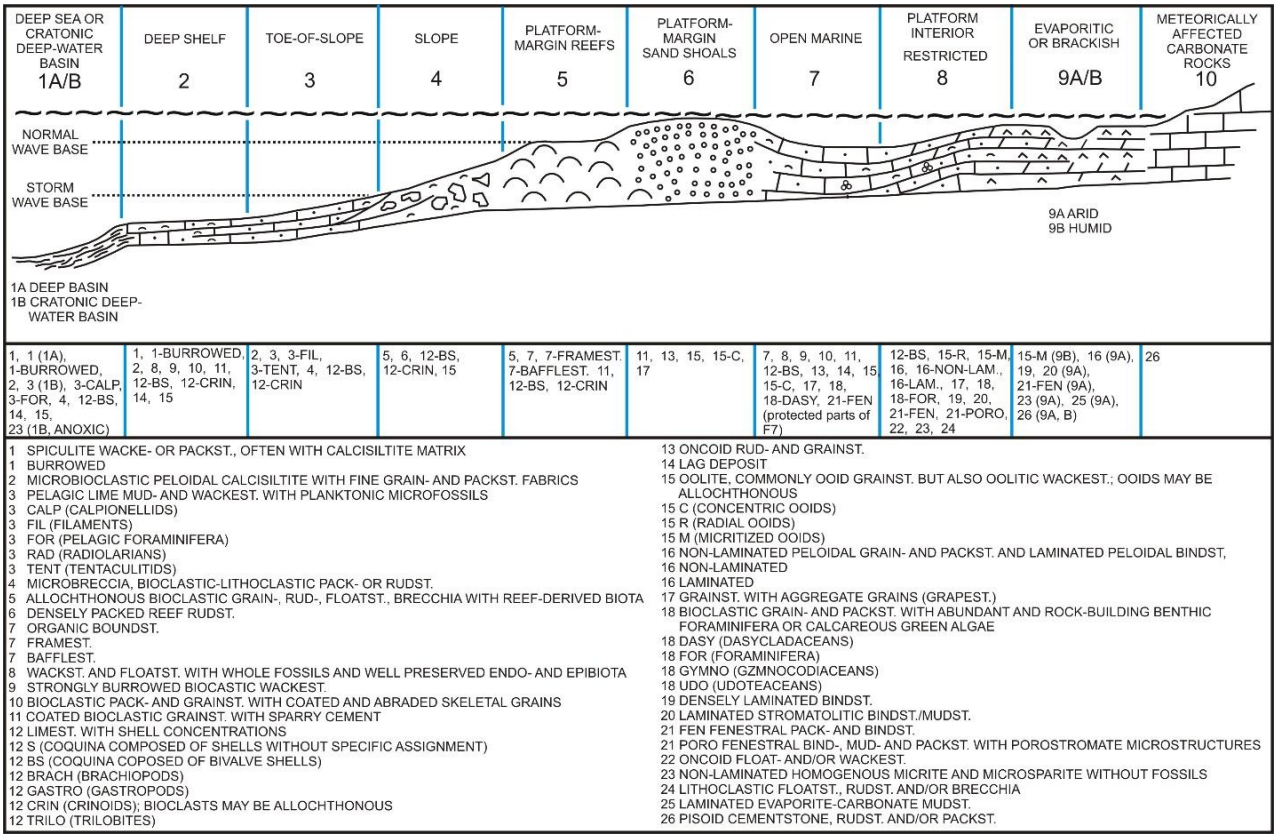

Figure 2. Compilation of the most important SMF and FZ information according to [1]. The upper part provides the names and numbers of the facies zones as well as the facies profile. The central part lists the occurrences of SMF types in the different FZs. The lower part lists the SMF types and their variants. Not all variants have been assigned to FZs by [1].

Conflict of Interest

The author declares no conflict of interest.

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