



**UNIVERSITÀ
DEGLI STUDI
DI FERRARA**
- EX LABORE FRUCTUS -

Sezione di
Fisica e Scienze della Terra

volume 1 (2014)



7th International Meeting on
Taphonomy and Fossilization
Ferrara, September 10th-13th, 2014

ABSTRACT BOOK

Annali Online dell'Università degli Studi di Ferrara

TAPHONOMY OF THE MINUTE IRREGULAR ECHINOID *ECHINOCYAMUS PUSILLUS* FROM THE MEDITERRANEAN SEA (ISOLA DEL GIGLIO)

**Tobias B. Grun and
James H. Nebelsick**

University of Tübingen, Department of Geosciences,
Sigwartstraße 10, D-72076 Tübingen, Germany

Echinoid skeletons often rapidly disarticulate after death depending on the strength of interplate connections as well as the environment in which they live. After death, complete tests can easily be destroyed. Sea urchins of the minute clypeasteroid genus *Echinocyamus*, however, feature an internal support system that stabilizes the test after death. Thus, this echinoid, which occurs in a wide variety of habitats, is often found preserved as complete tests in large numbers. Since *Echinocyamus* has a good preservation potential in both Recent and fossil sediments, this echinoid is predestined for comparative analyses with respect to ecological parameters, sediment types and between time slices.

In the presented research, recent *Echinocyamus pusillus* (in all 192 individuals) from the Mediterranean Sea are analysed for 7 taphonomic features of different morphological characters: (1) test abrasion, (2) ambitus abrasion, (3) peristome abrasion, (4) periproct abrasion, (5) encrustation and, if available, (6) drillhole outline and (7) drillhole abrasion. Each taphonomic feature is categorized into 5 grades ranging from very well preserved (Grade 1) to highly affected (Grade 5). These results are compared with respect to different localities, depths and size classes as well as to comparable data on *Echinocyamus crispus* from tropical settings of the Red Sea. The amount of drilled and undrilled tests along the taphonomic gradient are also compared in order to investigate the influence of this specific type of test damage due to drilling predation on shell preservation. The results show that most individuals can be categorized into taphonomic grades 1 and 2 with only few individuals showing higher levels of damage. This result is discussed with respect to depositional environment and possible surface residence times of the echinoids.