

INTERCALIBRATION OF THE BATHYPHOTOMETERS
SALPA (UKRAINE) AND HIDEX (USA) IN THE MARMARA SEA

R. WILLIAMS¹, A. MISHONOV², S. PIONTKOVSKI³, YU. TOKAREV³, E. BITYUKOV³,
A. KOVALEV³, O. CHERIPANOV³, B. SOKOLOV³, V. VASILENKO³, M. GEIGER⁴,
J.L. BIRD⁴, A. YILMAZ⁵, H. SUR⁵, M. DEMIREL⁵

1. Plymouth Marine Laboratory, Prospect Place, Plymouth, UNITED KINGDOM
2. Marine Hydrophysical Institute, Sevastopol, Crimea, UKRAINE
3. Institute of Biology of the Southern Seas, Sevastopol, Crimea, UKRAINE
4. Naval Oceanographic Office, Stennis Space Center, Mississippi, USA
5. Institute of Marine Science, Middle East Technical University, Erdemli, TURKEY

ABSTRACT

Plankton bioluminescence together with depth, temperature and conductivity were measured during a joint research expedition onboard R.V. Bilim in the Black and Marmara Seas in late October 1996. The work was funded under an Office of Naval Research (USA) grant. The main objective was to intercalibrate two bathyphotometers and to obtain the necessary coefficients, which would enable comparison of US and FSU databases on bioluminescence. The bathyphotometers systems were 'SALPA' (Ukraine) and 'HIDEX' (USA). Data were collected from 106 vertical profiles for 'SALPA' and 80 vertical profiles for 'HIDEX' taken over day and night periods in the Black (two stations) and Marmara (nine stations) Seas. The profiles of potential temperature, salinity, fluorescence and light transmission were measured by means of the Sea Bird CTD. The water samples (63) were taken from selected depths proceeding the profiling with the bathyphotometers. These samples together with zooplankton samples taken with the Juday net were analysed. In the Marmara Sea the steep halocline was responsible for an accumulation of phytoplankton. A 'monoculture' of the dinoflagellate *Notiluca scintilans* at the halocline gave a narrow band of strong bioluminescence, which was extremely useful for calibration purposes. There were differences between profiles from the two bathyphotometers with 'SALPA' seemingly recording higher level nearer the surface and measuring more peaks. The absolute values were assessed and the units of photons $s^{-1} l^{-1}$ ('HYDEX') were compared to those measured by 'SALPA' of $\mu W cm s^{-2} l^{-1}$. It is our conclusion that sufficient data were collected during this cruise to enable useful comparison between these two instruments and scientific community can use the derived coefficients.

International Conference on Oceanography of the Eastern Mediterranean and Black Sea, similarities and differences of two interconnected basins, Athens (Greece), 23-26 February 1999. in, abstracts book, edited by E. Th. Balopoulos, A. Iona, D. Sakellariou, Athens, Greece, 1999