NOTES AND NEWS

ALBRECHT BETHE’S CONTRIBUTION TO CRUSTACEAN NEUROSCIENCE: HUNDRED YEARS AGO AND TODAY

BY

ZHANNA SHURANOVA1,3) and YURI BURMISTROV2)

1) Institute of Higher Nervous Activity and Neurophysiology, Butlerova 5a, Moscow 117485, Russia
2) Institute for Information Transmission Problems, Bol’shoj Karetnyj 19, Moscow 127994, Russia

“Es war von Anfang an mein Plan, das Nervensystem eines Thieres, das in anatomischer und physiologischer Beziehung genügende Differenzierung zeigt, ohne dazu complicirt zu sein . . . anatomisch und physiologisch zu bearbeiten, in der Hoffnung, wenigstens einen Theil der physiologischen Vorgänge auf Grund der gewonnenen anatomischen Basis erklären zu können.”

A. BETHE, 1897: 462

Abbreviations. — CNS, central nervous system; COC, circumoesophageal connective; IN, interneuron; LGA, lateral giant axon; MGA, medial giant axon; SOG, suboesophageal ganglion.

INTRODUCTION

Albrecht Bethe was a prominent German anatomo-physiologist by the end of the 19th and in the first half of the 20th century. Only a few publications about him are available (Thauer, 1955; Florey, 1985, 1990). Curiously, any attempt to search for references to him via Internet ends with the remark: “A. Bethe, German physiologist and father of Hans Albrecht Bethe, the Nobel Prize in Physics 1967”. Afterwards, many tens of references on H. Bethe follow but nothing on A. Bethe. The latter would probably be proud of the achievements of his son, but he is also worth to be praised for his own activities. This paper sets out, firstly, to pay a tribute to A. Bethe who is now so little known, and secondly, to estimate his contributions to the current state of knowledge about the higher control of motor functions in decapod crustaceans.

A. Bethe (1872-1954; fig. 1) was born at Stettin, Germany (now Szczecin, Poland). He was educated at Munich and received there (in 1895) his Ph.D. for an
anatomical study “Die Otocyste von Mysis (Latreille, 1803)” (under R. Hertwig). At the same time he used the crab, *Carcinus maenas* (L., 1758), for anatomical and physiological investigations of its central nervous system (CNS) (Bethe, 1895). In his school years, he had been familiar with A. Dohrn, the founder and first director of the Stazione Zoologica at Naples where Bethe worked at the end of the 19th century (Bethe, 1940; Fantini, 2000). Later, he was a professor at the

Fig. 1. Albrecht Bethe (1872-1954).