Summary

The habilitation thesis titled "The Superfamily Platygastroidea (Insecta: Hymenoptera): Anatomy, Morphology, Taxonomy, and Systematics" is based on the author's scientific achievements in the field of classical systematics and taxonomy of a group of parasitoid wasps that are poorly studied but potentially useful in biological or integrated pest control. These wasps target significant agricultural pests such as *Malacosoma neustria* (lackey moth), *Leucoma salicis* (white satin moth), *Eurygaster integriceps* (wheat stink bug), *Nezara viridula* (southern green stink bug), *Orgyia antiqua* (rusty tussock moth), *Locusta migratoria* (migratory locust), and *Tabanus* spp. (horseflies), among others.

I believe that today, academia remains somewhat of a mystery, with very limited interaction between University's staff and the general public. In recent years, my University had taken steps to address this issue by organizing events such as "Researchers' Night" and "Biology in the Park". At the national level, efforts are being made to bridge the gap between laboratory research and the economic sector through experimental demonstrative projects (PED projects).

This thesis was designed to meet academic standards, with the primary goal of obtaining habilitation, but also to be accessible to master's students—helping them consider a research career—and even to the general public—offering insight into the academic profile of a university professor engaged in scientific research. Since specialists can consult my scientific publications, I chose to write this thesis in Romanian to better fulfill these secondary objectives. The thesis follows the guidelines published on the **CNATDCU** website, ensuring it reflects my scientific achievements, career evolution plans, and future academic development objectives. It does not fully reproduce published works; rather, the scientific results and discussions within them demonstrate my competencies and skills. Only a selection of my most significant contributions as a leader or co-author are included as arguments.

For example, among my **α-taxonomy** works, I had focus primarily on three studies concerning the genus *Fidiobia*. This selection highlights my development as a researcher over time, as I gained experience, collaborations, and improved financial resources. As mentioned in this thesis, my academic career has been built entirely in Romania, within the Faculty of Biology at "Alexandru Ioan Cuza" University of Iași. However, most of the work on my CV could not have been done without high-performance imaging equipment, without access to the SEM microscope, without the opportunity to visit the world's main scientific collections, without collaborating with experienced researchers to provide me with very valuable advice and excellent material for study, and without a competitive, yet friendly environment.

In order for the reader to better understand my career trajectory, instead of a preamble I have created a short chapter suggestively titled Context, divided into General Context and Specific Context. Here are specified the main challenges that a taxonomist must face – almost regardless of the taxonomic group studied, but also the challenges specific to the research area – Taxonomy and systematics of the Superfamily Platygastroidea.

Scientific Contributions

After a brief presentation of the career in stages – the "initiation" stage in research, the "exuberant" research stage and the "mature" research stage, I move on to listing the

competencies and justifying them. Thus, the statement that I have competencies in the α-taxonomy of the Platygastroidea superfamily is proven by participating in the description of 68 taxa new to science – 66 species and 2 genera. Of these descriptions, only the description of a single species is reproduced in the habilitation paper, a description that is used as a model for the rest of the taxa. All descriptions of species are accompanied by suggestive plates containing high-resolution photographs that will help in the identification / recognition of the respective species. In my α taxonomy work I have given particular importance to the iconography. A justification for this attention is that I wanted to allow the reader to be able to accurately identify a species presented in a work I have done without having to study the type material. In this way I believe that I can contribute to the preservation of this particularly valuable material, preventing its accidental destruction or loss during transport from one institution to another (in some cases the institutions are located on different continents).

My expertise in wasp morphology is evidenced by my monograph on the maxillo-labial complex and studies on the aedeagus (*Sparasion*, *Platygaster*) and ovipositor (*Platygaster*, *Fidiobia*). In this work, the maxillo-labial complexes of almost all genera that were recognized in 2016 as belonging to the family Scelionidae were described and illustrated. To illustrate this particularly complex structure, a classic method was used – camera lucida drawing, supplemented with optical and SEM microscopy. I was particularly honored to find this work in several of the laboratories visited, used by doctoral students. This work is not reproduced in this habilitation thesis either, only the discussions being taken from it. The full work was submitted in the portfolio.

My knowledge of the anatomy of wasps from the superfamily Platygastroidea is reflected, in part, by the work that has as its subject the genital and excretory apparatus of scelionids. At the moment, it is the only work in the specialized literature that addresses this subject in this taxonomic group. The explanations for this are simple – the submillimeter size of most members of this group makes dissections very difficult, and another factor would be the need to perform dissections on very fresh material. The last factor brought to the discussion limited the material available to me only to the genera found around Iași. Another factor that emphasizes the difficulty of carrying out this study is the fact that an attempt was made to ensure that the specimens were not destroyed during the dissections or were reconstructed in order to be kept as a specimen voucher. In this work too, the iconography is made with classical drawings, doubled with photographs, the role of the photographs being to provide veracity to the drawings.

My contributions to Platygastroidea phylogenetics are supported by my study on phylogenetic signals in mouthpart structures and my co-authorship of a recent systematic revision of the superfamily. This revision led to the reclassification of Platygastroidea, replacing the traditional division into Platygastridae and Scelionidae with a new system of eight families: Geoscelionidae, Janzenellidae, Neuroscelionidae, Nixoniidae, Platygastridae, Proterosceliopsidae†, Scelionidae and Sparasionidae.

Future Career Development

My career development plan includes multiple objectives, most of which build on ongoing projects, ultimately leading to the attainment of a Full Professor position.