



With support from the Australian Geoscience Council and the Australian Academy of Sciences I was able to travel to Germany and visit three museums: the Staatliche Museum für Naturkunde in Karlsruhe, the Staatliches Museum für Naturkunde in Stuttgart and the Bayerische Staatssammlung für Paläontologie und Geologie in Munich. The primary aim of the trip was to photograph pterosaur specimens and make detailed first-hand observations of fossils that resemble a new Australian pterosaur specimen I am currently describing.

Research Aims and Scientific Outcomes

I focused particularly on specimens with relatively complete skulls, material from the Romualdo Formation from Brazil and those preserving soft tissues. Although I am already considered an expert in my field, prior to this

research trip I had not examined Triassic or Jurassic pterosaurs in person. Access to fossils spanning approximately 130 million years of evolution has expedited my knowledge of morphological diversity within the group.

In total, three weeks were spent in Germany. Two weeks were spent at LMU in Munich working with the Bavarian State collections, three days were spent at SMNS in Stuttgart, and one day was spent in the collections at SMNK. Time at SMNK was limited, as the palaeontology department was operating with reduced staff and volunteers due to preparations for the installation of a new hominid evolution exhibit. Nevertheless, this visit was a critical component of the trip.



A newly identified Australian pterosaur specimen shows striking similarities to *Ludodactylus sibbicki*, which is housed at SMNK. Although this species was first described in 2003, several characters, including most notably the spacing and pattern of the teeth, were omitted from the original description. As these features are widely considered diagnostic within pterosaur families, collecting these data was essential to determining whether the Australian specimen represents a new species within the genus *Ludodactylus* or a species entirely new to science. First-hand examination also allowed me to better understand the taphonomy of this specimen, including deformation and flattening during fossilisation—details that are often difficult to assess from photographs alone unless explicitly described.

Data Collection and Documentation

Across all institutions, I collected an extensive photographic dataset comprising 2,975 photographs of more than 100 specimens, including both slabs and counter-slabs. Some specimens preserve multiple skeletal elements in three dimensions and were photographed in six standard anatomical views. Macro photography was also undertaken to document soft tissue structures and dental ornamentation, which are rarely illustrated in sufficient detail in the literature.

Collaboration and Skill Development



During my time in Munich, I met with Dave Unwin from the University of Leicester to discuss his methodology for photographing fossilised soft tissues under ultraviolet light.

I am currently collaborating with Professor Alistair Evans and Kathleen Garland (Monash University), as well as Dr. Jordan Bestwick, a postdoctoral researcher at the University of Zurich, on a study examining the growth of cranial crests in pterosaurs. The photographic dataset generated during my German research visit will form a key component of this study, with data collection expected to be completed by the end of 2026.

While in Germany, I spoke with Oliver Rauhut (LMU) and Rainer Schoch (SMNS) regarding the possibility of applying for postdoctoral research positions with their institutions in the future, suitable funding bodies and possible projects.

I thank the AGC and AAS for supporting this research visit, and the collection managers at LMU, SMNS and SMNK for facilitating access to the many specimens in their care.