There is a lack of knowledge regarding hepatic metabolism and the pathogenesis of hepatic
disease in the reptilian liver (1). The Nile crocodile is an important keystone reptile for aquatic
biodiversity in Africa (2) and is one of the top commercially utilized species of crocodiles in the
world (3). The morphology of the liver of mammals, birds and reptiles have been investigated
comprehensively, but studies of the Nile crocodile liver are deficient. This presentation
explores the histology and ultrastructure of the liver of the juvenile Nile crocodile, Crocodylus
niloticus. Livers from five juvenile Nile crocodiles, obtained from Izintaba Crocodile Farm in
South Africa, were perfusion-fixed and prepared using standard techniques for light and
transmission electron microscopy. Several of the microscopical features are comparable to
that described in other reptiles, most notably the absence of the classic lobulation pattern
usually found in vertebrates and the presence of collagen trabeculae in the liver parenchyma
of some crocodilian species. However, a few distinctive findings differentiate the juvenile Nile
crocodile from the reptiles studied. For instance, the presence of a basal lamina between
hepatocyte groups and Glisson’s capsule, the variable location of the Kupffer cells, the
presence of conspicuous tubular structures in Kupffer cells and the coexistence of stellate and
myofibroblasts (Fig. 1) in the space of Disse. The establishment of baseline data for the liver of
the Nile crocodile is essential for comparative studies with other crocodilians and for the
assessment of the pathology of liver disease.

References
2. ASHTON, P.J. 2010. The demise of the Nile crocodile (Crocodylus niloticus) as a keystone

Acknowledgement: The authors are grateful to the University of Pretoria for sponsoring
attendance of ICM2014 and the Izintaba crocodile farm for donating the juvenile crocodiles.
Fig. 1: Myofibroblastic cells (M) and stellate cell (SC), containing a lipid droplet (L), occupying the same area in the space of Disse between two sinusoids (stars). Note endothelial cell cytoplasmic extensions (arrows). H, Hepatocytes.