Kenyan rainforests as promising source for novel anti-infective agents from fungi



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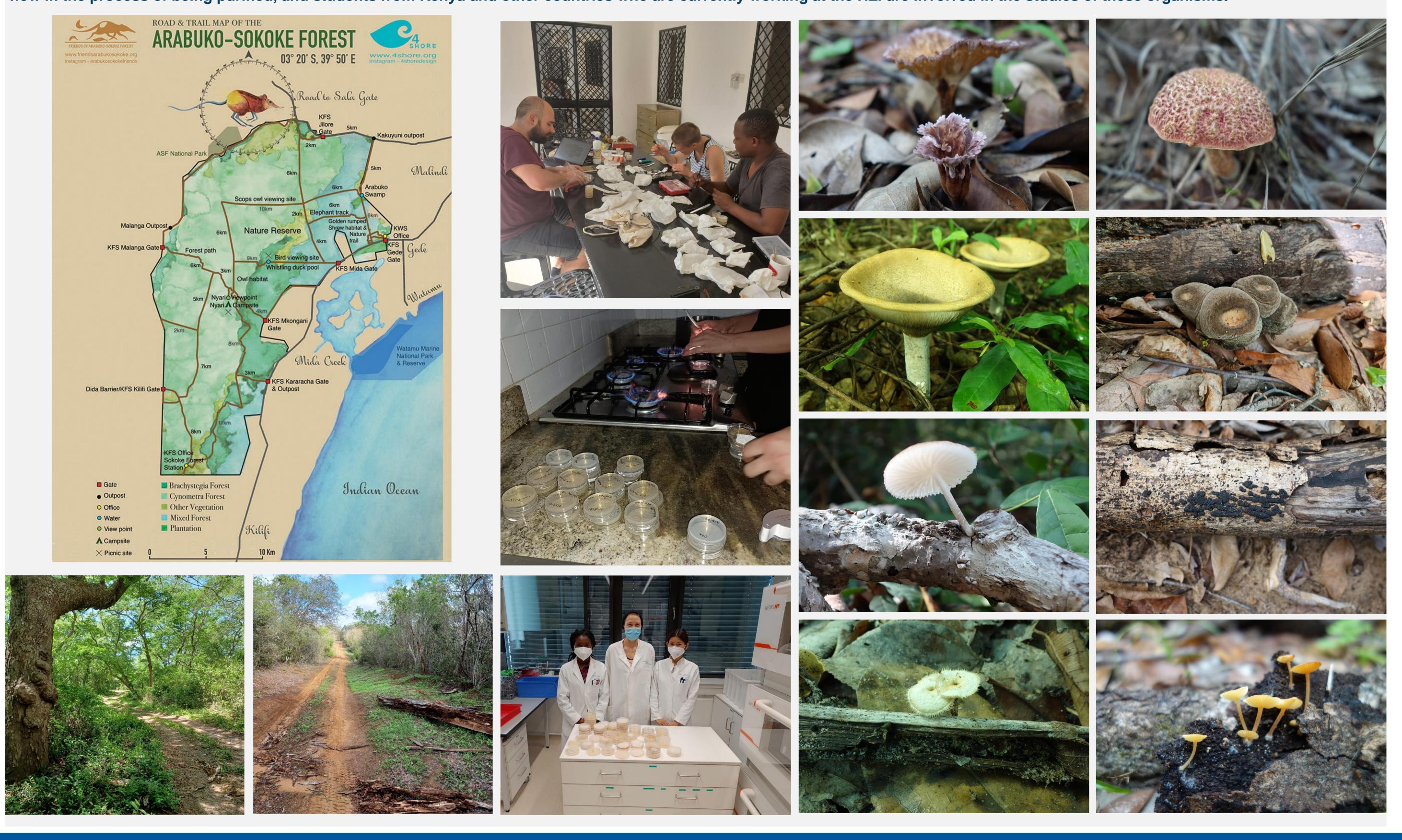
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For the last seven years, we have embarked on an extensive studies of secondary metabolites of basidiomycetes collected from Kenya's rainforests, Kakamega and Mount Elgon National Reserves. In our continious search for novel antimicrobial agents, plenty of novel secondary metabolites with interisting biological activities have been discovered from these habitats.



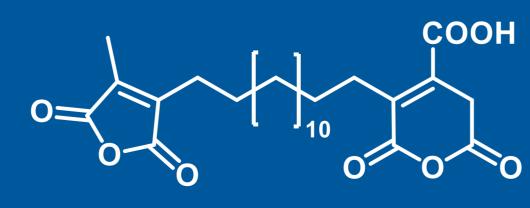
In the course of our collaboration with Egerton University, we have conducted a foray in the Kenyan Arabuko Sokoke National Park in order to collect mushrooms. The rainforest is one of the few undisturbed primary forests, situated at the coast of the Indian Ocean in Eastern Africa. Even though the animals and plants of this area have already been studied intensively, virtually nothing is known about the Mycobiota (Fungi) of this area.

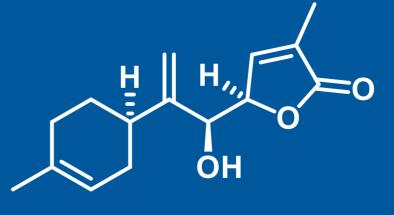
In May 2022, a week of intensive fieldwork has yielded over 150 specimens of macrofungi, many of which were cultured from spores or the fruitbody tissue. We cultured them on-site to make them available for studies on both, their taxonomy and their potential to produce novel antibiotics and other potentially beneficial secondary metabolites. The mycelial cultures are now in the process of being purified, and students from Kenya and other countries who are currently working at the HZI are involved in the studies of these organisms.

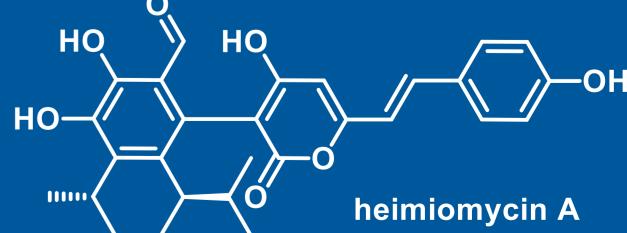




other parts of the world.







Since we have been rather successful in the past years with respect to the discovery of a variety of new bioactive natural products from Kenyan basidiomycetes, chances are good that this project will result in many additional valuable findings. In any case, the project heavily contributes to the training of young researchers from Africa and











Sandargo et al. (2019) Biotech Adv
Cheng et al. (2019) J Nat Prod
Chepkirui et al. (2019) J Agaric Food Chem
Chepkirui et al. (2018) Molecules
Chepkirui et al. (2018) J Nat Prod
Chepkirui et al. (2016) Phytochemistry