



BioS Reports

glimpse into the activities of the
Master's course „Biology in Society“

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EXCURSIONS AND OTHER NEWS

Small insights in student's points of view, field trips, and other stuff we do.

Bonding trip to Sayda youth hostel

by Nele Kheim and Helen Rothfuß

To get to know each other, students and professors went on a trip to Sayda for the introductory away-week. Sayda is located on the edge of Saxony, with barely any phone reception or wifi. This made it an intense bonding experience that was embellished with interesting lectures and seminars. Even guest speakers were brave enough to travel to and join us in Sayda. The international highlight was the visit of Prof. Michael Hochberg from Montpellier, with whom we talked about the future of scientific publishing. Interesting, sometimes philosophical discussions, for example on limits and ethics of science, as well as competitive bowling sessions created a memorable experience. (But not to worry, there was time and space for a little me time if desired.) The trip was supported by TU Dresden.



EXCURSIONS AND OTHER NEWS

Excursion to Dresden zoo

by Nele Kheim

Quick VIP trip to Dresden zoo in November 2021, combined with an ethical and controversial discussion on animal welfare, animal keeping and zoos in general.

EXCURSIONS AND OTHER NEWS

Meeting a Nobel Prize winner

by Nele Kheim and Helen Rothfuß

In June 2022, TU Dresden was honoured by the visit of Nobel Prize Winner Sir Gregory Winter, who won the prize for chemistry in 2018 for the phage display of peptides and antibodies.

He is not only active in scientific research, he has also founded multiple companies to transfer his scientific findings to society. His findings play a crucial role in the development of antibody therapeutics, which are successfully applied to treat several cancer and chronic inflammatory diseases.

The morning after Sir Gregory gave his official lecture about his research to all interested listeners in Audimax, BioS students were lucky enough to meet him for an exclusive and more informal talk, accompanied by some coffee, tea and cake. Having a glimpse behind what it might take to become a Nobel Prize winner, accompanied with intriguing stories and sometimes unexpected turns, was a special experience. In regards to following a career in academia, Sir Gregory Winter had one advice to give us: Whatever you do in research, it should be important.

ANIMALS AND MONEY

This part of BioSReports unravels interesting relations between animals and the economy.

Asian Palm Civets bring millions of USD annually to Indonesia's economy

by Birte Martens

Almost 7 million tons of coffee are consumed worldwide each year¹. The fourth largest coffee exporter of the world is Indonesia^{2,3}, with over 440,000 t of coffee exported annually⁴. The specialty coffee Kopi Luwak has become known internationally as the world's most expensive coffee^{5,6}, gaining popularity as a novelty item. It is produced using coffee beans that have been eaten and excreted by the Asian Palm Civets (APC)^{6,7}. The complicated production process is the reason for the high prices of the coffee. Nowadays, most Kopi Luwak is produced by caged civets^{8,9}.

Asian palm civets (*Paradoxurus hermaphroditus*) are viverrids from south-east Asia⁸. They are omnivorous^{8,9}, seeds of the plants they eat pass through their digestive system largely undamaged^{10,11}. In addition to APCs supposedly only consuming the highest quality coffee cherries, the fermentation and partial digestion processes in the civet's gut result in the coffee made from these beans tasting better than normal coffee.^{12,13}

An estimated 800 to 8000 Asian palm civets are held to annually produce around 20¹¹–200¹² tons of Kopi Luwak, and each animal aids in the production of roughly 25¹⁴–30¹⁵ kg Kopi Luwak per year. With a cost of 100¹⁶–1.900¹⁷ US\$, the Kopi Luwak industry roughly creates an annual income of 2 million –371 million US\$. The turnover of the Kopi Luwak sector is limited e.g. by acquisition costs of civets, their upkeep¹⁸ and the production process itself. By Indonesian law, civets have to be released from coffee plantations after five years, but plantation guides reported that they are often kept for their whole lives, which is around 15 years⁴. The total annual costs of Kopi Luwak amount to roughly 250 thousand US\$ to 2,5 million US\$, if civets are kept for 15 years. Within the same timespan the yearly net income from Kopi Luwak production in Indonesia sums up to 1,7 – 368 million US\$.

Indonesia produced 717,000 t of coffee in 2020¹⁴, meaning that the Kopi Luwak industry contributes about 2.79 – 27.9% to Indonesian coffee production. The price of Kopi Luwak varies greatly, depending on where in the world it is sold and whether it is produced by wild or captive civets^{6,12}. The costs of acquiring and keeping civets on plantations are difficult to estimate, the only information on such costs comes from the pet trade where prices are likely higher. Accordingly, the net income is likely higher than estimated here. The cost of production was assumed to be similar to normal coffee, but it may be lower, due to having less processing steps¹⁰. Costs for transport and storage could not be determined. Due to a lack of concise data and many variables, the calculation of the exact worth of Kopi Luwak production is difficult. Even though it is difficult to find reliable data on the worth of Asian palm civets to Indonesia it seems clear that they contribute several million US\$ to Indonesia's economy annually. As long as Kopi Luwak remains internationally regarded as a specialty or novelty item, civets will play an important role for Indonesia.



Sir Gregory Winter (front row, middle) with BioS students, 23 June 2022.