A Living Fossil

Dear Reader,

Imagine the amazement of the paleontologists when they make a sensational discovery in a rock stratum that is 48 million years old. Between the beetle *Protognathinus spielbergi*, named after Steven Spielberg, and the ancient horse-like creature *Eurohippus messelensis*, they reveal a fossilized *Machina rudolfdielesi* which even has an overhead cam that has been beautifully preserved. Please forgive me for this flight of fancy, but it is what always comes to my mind when someone mentions the “fossil combustion engine.” It is the fuel used in the engine that is of fossil origin. Whether the engine itself is a fossil, as many people would like it to be, has by no means been decided, despite the prevailing hype over electric cars.

There are currently around 1.3 billion vehicles on the planet, almost all of which have a combustion engine. Figures produced by the German VDA show that in 2019 around 80 million new cars were registered. If you add commercial vehicles, the total comes to approximately 100 million. According to the Center for Solar Energy and Hydrogen Research Baden-Württemberg (ZSW), almost 2.3 million of these were electric cars, but this figure includes all plug-in hybrids with combustion engines. Until at least 2030 it is probable that well over 80 % of the new vehicles registered worldwide will have combustion engines. The average lifetime of a car is currently 18 years. This means that all cars registered at the end of next year will likely still be on the roads by 2040 and the 80 million forecast for 2030 will still be around in 2048.

And this is precisely where the criticism from experts such as Prof. Thomas Willner of Hamburg UAS comes in: “The impact on the climate that everyone is hoping for from the electrification of vehicles will kick in far too late and the

reduction in emissions will be impossible to achieve in such a tight timeframe. We need measures that will have an immediate effect across the entire existing fleet, because this is where the battle against climate change will be decided.”

This is why Willner is recommending the use of synthetic fuels. As Tobias Block, Coordinator for Renewable Fuels at the VDA, explains: “From the perspective of the automotive industry, there is no problem with using synthetic fuels.” According to Mario Kuschel from Chemieanlagenbau Chemnitz, the manufacturing costs of gasoline using methanol synthesis are currently around 1.10 euros per liter. Assuming widespread use, this figure would fall to below 1 euro per liter.

Karsten Schulze, Technology President of the ADAC, sums up the situation: “It isn’t the combustion engine that is the problem, but the fuel.” In 1997, a *coelacanth*, a creature that everyone believed had been extinct for 65 million years, was fished out of the sea off the coast of the Indonesian island of Sulawesi – a living fossil. Is this a new trend?

Frank Jung
Editor

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