

Slime moulds may rule us

Brendan Byrne discovers alien solutions to human problems

Plasmodium Consortium, Hampshire College, Amherst, Massachusetts

FOR the first time, non-human researchers have issued policy advice on everything from the proposed border wall between the US and Mexico to the correlation between environmental hardship and material affluence.

The Plasmodium Consortium at Hampshire College, Massachusetts, is a policy research institute composed of “visiting non-human scholars” – members of the species *Physarum polycephalum*, one of the more common types of slime mould. A minor celebrity in philosophical circles, slime moulds are neither unicellular nor multicellular, but something in between.

They move very slowly, via decentralised protoplasm tubes. Despite having no central nervous system or brain, they are excellent at solving tough computational problems, such as negotiating mazes. They are also immortal and can appear faintly terrifying, like a 1950s movie monster.

Presented by experimental philosopher Jonathon Keats, curator Amy Halliday and biology professor Megan Dobro, the consortium has been showcasing the policy decisions of these “scholars”. Scenarios constructed around urgent social issues were modelled in petri dishes, often using slime moulds’ favourite food, oat flakes, and strongest deterrents, salt and light. Keats then summed up the findings in a series of letters to federal and international bodies, stamped with the consortium’s seal.

Solving problems by feel: dishes of *Physarum polycephalum*

In the border control scenarios, two countries were represented by slime mould snacks, one protein-based, the other a carbohydrate. In the first scenario, a Plexiglas wall was erected between the “countries”. In the second, a “controlled border” was set up using a light source. In the third, an intermittent light source represented an “erratically controlled border”. The final part had no formal border.

Writing to Kirstjen Nielsen, US Secretary of Homeland Security, Keats says that “unconstrained slime molds... thrive[d] in the open border zone, suggesting that borders may be especially vital

regions”. Mr Trump: slime moulds say “don’t build that wall”.

Another scenario models the US opioid crisis using valerian root, which distracts slime moulds to the point of starvation. Pure valerian root is placed at the centre of a Petri dish, with concentric circles featuring diminishing amounts of it mixed with escalating nutrients. The final ring is pure nutrient.

US Attorney General Jeff Sessions, the recipient of Keats’s

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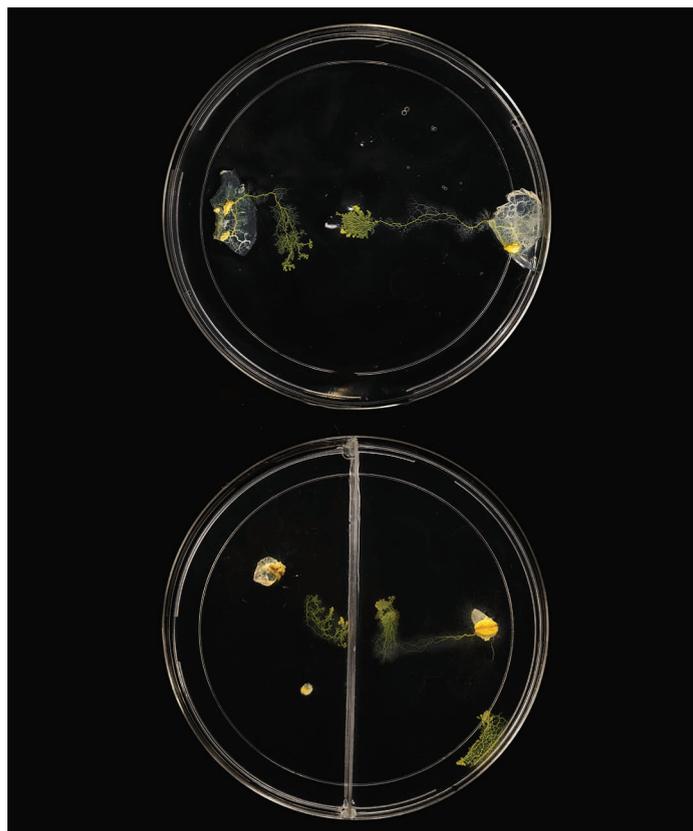
letter, will no doubt be thrilled to read that facing a choice between a highly addictive chemical and a nutritionally balanced meal, slime mould choose the former, with potentially fatal consequences. However “when presented with a chemical gradient between the addictive substance and nutrients – equivalent to availability of gateway drugs in a human environment – slime molds show a distinct tendency to migrate from the former toward the latter” – but not vice versa. Thus “gateway drugs” shouldn’t be considered dangerous, but rather as potential off-routes for addicts.

Clearly the scenarios are meant as provocations rather than experiments; the scholars’ pronouncements are witty, but not jokes. The conclusion of the border control scenario – that the US government should “replace current national barriers with parklands” – seems ridiculous only until we remember that historically, the chief centres of cultural and economic development were port cities, where cultures interact with the least governmental inhibition.

My favourite scenario tackles the thorny issue of the positive correlation between material affluence and environmental hardship. No one will be surprised to find slime moulds are leftists.

Hampshire College’s Center for Plasmodial Research is to host more scholars, with projects exploring food deserts – areas where people struggle to access healthy ingredients – and redrawing a bus route. ■

Brendan Byrne is a writer and critic based in New York



RAINA MENDEL