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Mapping of fruit fly brain to change neuroscience – 7th October 2024

Level 4

Scientists have created a map of a fruit fly's brain. The map of the neurons and connections is the most detailed ever produced for a creature. This feat could revolutionize neuroscience and unlock secrets about our own brain. A brain specialist told the BBC: "The mapping of the fly brain is really remarkable and will help us get a real grasp of how our own brains work." He said it could help us look into "the mechanism of thought". It took scientists many years to analyze the fly's pinhead-sized brain. They created a diagram of 139,255 neurons and 50 million connections.

The diagram looks like a work of art. It is a beautiful, colourful web of neurons. The map is known as a connectome. Scientists sliced the fruit fly's brain into 7,000 microscopic pieces. These were studied with an electron microscope. This imaged cells that were four-millionths of a millimetre wide. The researchers classified 8,400 cell types. If the neural pathways were unravelled, they would stretch for 150 metres. The human brain has 86 billion neurons and trillions of connections. It will be many years before technology can map it.

Level 5

Scientists have created a map of the wiring of a fruit fly's brain in a research project called FlyWire. The map of the neurons and connections is the most detailed ever produced for a creature. This groundbreaking feat could revolutionize the field of neuroscience and unlock secrets about our own brain. Brain specialist Dr Gregory Jefferis told the BBC: "The mapping of the fly brain is really remarkable and will help us get a real grasp of how our own brains work." He said it could provide insights into "the mechanism of thought". It took scientists years to analyze the fly's pinhead-sized brain. They created a detailed diagram of 139,255 neurons and 50 million connections.

The diagram of the fly's brain's neural pathways looks like a scientific work of art. It is a stunning, colourful web of neurons. The diagram is known as a connectome. To create it, the scientists sliced the fruit fly brain into 7,000 microscopic slivers. Each of these was studied using an electron microscope that imaged cells that were four-millionths of a millimetre wide. The researchers classified more than 8,400 different cell types. If the neural pathways were unravelled, they would stretch for 150 metres. The human brain has 86 billion neurons and trillions of connections. Current technology could not create a connectome of our brain. That map is still decades away.

Level 6

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