NEWS

Russian science academy rejects Putin ally

Mikhail Kovalchuk's rise to the top position in Russian science seemed a done deal. But the general assembly of the Russian Academy of Sciences has thwarted plans for the head of its newly established division for nanosciences to become the influential academy's new president.

Russia's then president Vladimir Putin last year chose Kovalchuk to head Russia's US$7-billion push into nanotechnology. A few weeks later, the academy's leadership appointed Kovalchuk as 'acting' vice-president for nanotechnology.

Kovalchuk is the director of the Kurchatov Institute in Moscow, Russia's premier centre for nuclear science. But as he was not a full member of the academy (only a 'corresponding' member), he could not be elected president. In preparation for the election, last week's general assembly was expected to grant him full membership. But on 28 May he failed to win the two-thirds majority vote necessary for membership, by 44 votes.

According to the academy's rules, full membership is restricted to individuals who have contributed in a ground-breaking way to the advancement of science. Kovalchuk — whose older brother, Yuri Kovalchuk, is a successful banker with close personal ties to Putin — has earned his merits as a skilled science administrator with influential contacts in political and business circles. He has also done research, mostly in crystallography, but his achievements and publication record are not considered outstanding.

"It seemed obvious that Osipov would merely keep the position for Kovalchuk."

Nonetheless, observers expected that the academy's long-time president, mathematician Yuri Osipov, who was on 30 May re-elected for the fourth time, would just be a placeholder for Kovalchuk (see 'Presidential election disappoints reformists'). Osipov's rival candidate, high-energy physicist and former science minister Vladimir Fortov, who had promised he would modernize the ageing academy, failed to win a majority in the presidential elections.

According to an unwritten but, so far, strictly enforced rule, academy leaders should not be older than 70 years. Osipov, who turns 72 in July, had last year promised to step down, but changed his mind after jurists assured him that the age provision would not be an obstacle.

Kovalchuk had already pawed the ground. He told *Nature* last year that Russia needs to rethink its approach to science, which critics say suffers from prevailing Soviet structures and widespread lack of competition (see *Nature* **449,** 524–527; 2007).

"Nobody really believed that Osipov intended to remain president for very long," says biologist Mikhail Gelfand, a Howard Hughes International Research Scholar and vice-president for science at the academy's

Presidential election disappoints reformists

The re-election of Yuri Osipov as president of the Russian Academy of Sciences is a bitter disappointment for the many Russian scientists who had hoped for a regime change.

With 651 votes for Osipov in Friday's election, the 71-year-old mathematician succeeded over two younger rivals, physicist Vladimir Fortov and ecologist Valery Chereshnev, who ended up with 486 and 88 votes, respectively.

Osipov has been criticized in the past for standing in the way of reform, which many scientists think is urgently needed to restore the strength and reputation of Russia's best-known scientific brand.

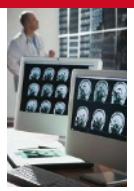
In an open letter to the general assembly, Alexander Spirin, one of Russia's most highly recognized biochemists, warned that Osipov's re-election would cement the academy's reputation for being stubbornly opposed to introducing changes such as international peer review and open competition for funding.

Fortov, who served as Russian science minister from 1996 to 1998 and who then became the first president of the Russian Foundation for Basic Research, said he would increase the fraction of research money distributed by open competition. He also planned to create closer ties with the scientific 'diaspora', the large number of scientists who emigrated from the country when they became disillusioned about the state of Russian science. And he intended to promote the recruitment of talented young scientists to Moscow, by helping them buy apartments in Russia's incredibly expensive capital.

Osipov has not yet outlined a detailed work programme for his fourth term in office. He is said to be open to the idea of building houses for young scientists on land that belongs to the academy. Other than that, he received crucial support from Prime Minister Vladimir Putin, who told the assembly on 29 May that the government will sharply increase academy members' salaries. Full members can now expect their monthly bonus payments to rise from around 24,000 rubles (US$1,000) to 50,000 rubles. Rank-and-file scientists, who often get less than $300 per month, may well come away empty handed.

"Few 'ordinary' scientists employed by the academy, me included, would have voted for Osipov," says Konstantin Severinov, a molecular biologist at the academy's Institute of Molecular Genetics in Moscow.

Critics say that the academy is increasingly giving up its scientific ideals for power and money-making purposes. "With its many vested interests the current leadership is losing its moral standing," says Gelfand. "Fortov would have meant a real change. Alas, it was not to be." **Q.S.**



PUNCHSTOCK

PROGRAMS THAT KNOW WHAT YOU'RE THINKING
Researchers can predict which noun a person is visualizing.
www.nature.com/news

S. CHIRIKOV/REUTERS

Mikhail Kovalchuk (right) has close ties with Russian prime minister Vladimir Putin (left).

Institute for Information Transmission Problems in Moscow. "It seemed obvious that he would merely act as a kind of interim president for a year or so, keeping the position for Kovalchuk."

Scientists close to the academy speculate that many members voted against Kovalchuk because they felt under too much pressure from its leadership to agree with its favourites. Others think that academics were disappointed that the money flow from Rosnanotech, a tax-exempt body set up last year to coordinate Russia's nanotechnology initiative to academy institutes, was sparser than they had hoped. Kovalchuk has a great deal of influence over Rosnanotech and is a member of its board.

Indeed, the desire for Rosnanotech money has taken strange forms. In May, an over-eager Siberian scientist sent a self-invented 'nanopowder' to at least five high-ranking academy members, including Kovalchuk, whose deputy director Svetlana Zheludeva opened the package. When Zheludeva died soon after, murder was suggested by the Russian media. Russian health officials have dismissed such speculation, saying that her death on 17 May from acute liver failure was not due to poison. ■

Quirin Schiermeier

Mars reveals early mysteries

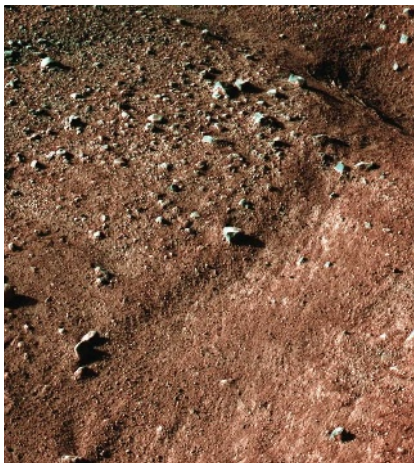
When NASA's Phoenix spacecraft settled in Mars' northern latitudes on 25 May, there was little doubt that it would land amid a quilted pattern of troughs created over time by ice contracting and cracking below the surface. The surprise is that Phoenix is surrounded by 'polygons' much smaller than expected.

"I'm not in a panic," says mission scientist Mike Mellon of the University of Colorado at Boulder. "But I'm intrigued that there's something we can learn here about Mars that we didn't know before."

Other surprises may arise this week. As *Nature* went to press, Phoenix had scooped its first handful of martian soil and was expected to unleash a battery of geochemical instruments on soil and ice samples. But the polygons — with their direct analogies in permafrost regions on Earth — offer one of the mission's earliest mysteries.

Polygons form as winter temperatures cause the ice to contract. Eventually, the tension caused by the contraction exceeds the strength of the ice, and millimetre-scale cracks open up. Soil plugs the cracks and, when temperatures rise again, the ice buckles under the pressure, pushing up the centre of the polygons and over time creating troughs at the boundaries (see picture).

Using images from the Mars Reconnaissance Orbiter (MRO) satellite, Mellon had previously measured 915 polygons in Phoenix's landing area with an average diameter of 4.6 metres. The smallest were 2.5 metres across, although the limits of the MRO camera prevented Mellon from identifying many that were smaller than that. When he modelled the ice-cracking process that forms the polygons, he calculated that 5 metres would be their typical diameter, he and colleagues report in a paper accepted for publication in the *Journal of Geophysical Research*. Also evident was the fainter imprint of a larger polygon system, which had troughs 22 metres apart and which could represent an earlier climatic epoch when Mars' spin axis tilted more, resulting in deeper ice near the poles.



NASA/JPL-CALTECH/UNIV. ARIZONA

Troughs on Mars are presenting a puzzle.

The modelling work made perfect sense until the first images from Phoenix last week allowed scientists to measure two polygons just 1.4 metres and 2.4 metres across — significantly smaller than the 5-metre and 22-metre ones. "We have to refine our theory in such a way that it explains all three scales," Mellon says. He hopes studies of the soil and ice parameters — their depth, strength and composition — will help him to adjust his models.

On Earth, there are two main types of cracks that lead to polygons. In the wet of the Arctic, melt water from the icy edges of the cracks flows in and refreezes, building up an ice wedge over time. But in the dry deserts of Antarctica, dust falls into the cracks in the subsurface ice and builds up sand wedges.

Phoenix should be able to discern between the two crack styles by digging a trough, says Ray Arvidson, a planetary scientist at Washington University in St. Louis, Missouri, and lead scientist for Phoenix's robotic arm. Although many scientists expect to find a sand wedge, an ice wedge would be a startling discovery — evidence that water flowed near the surface in the recent past.

Arvidson served on the science team for the Viking landers in the 1970s, and one of his disappointments is that a polygon lay just out of reach of Viking 2, which, until the arrival of Phoenix, had explored the most northern latitude of Mars. This time, one polygon, dubbed Humpty Dumpty, sits directly within Phoenix's digging area.

The arm, working like a backhoe, is expected to scrape a trench from the elevated centre of a polygonal mound into a trough called the Wall. ■

Eric Hand

See Snapshot Feature, page 712.

Check our blog for updates from the Phoenix mission: http://tinyurl.com/3hhax9.