



Issue 02-2015

July 2015

## AFoPS Making a New Start

### Chair

**Dr. Yeadong Kim**

Korea Polar Research Institute

### Secretariat

Korea Polar Research Institute

26, Songdomirae-ro

Yeonsu-gu, Incheon

406-840 Republic of Korea

T: +82-32-770-8431

F: +82-32-770-8439

[jj@kopri.re.kr](mailto:jj@kopri.re.kr)

<http://www.afops.org>

A special meeting of the Asian forum for Polar Sciences (AFoPS-XV) was held on 23 April 2015, during the ASSW at Toyama International Conference Center, Japan.

The meeting, attended by 15 delegates from 5 Members and an observer (Thailand) was presided by Dr. Kazuyuki Shiraishi of NIPR, the designated acting Chair for the Toyama gathering.

The AFoPS Committee discussed a range of issues on research/logistics

- The Members commonly recognized a need for a well-functioning, strong secretariat and agreed to carry on with a discussion on how to ensure the stability. The draft Terms of Reference for the secretariat submitted by Malaysia was accepted with minor changes. Proposed standard procedures for the meeting management have been agreed by the Committee.

- The Members welcomed inter-organizational cooperation with



AFoPS-XV, 23 April 2015, Toyama, Japan

### In This Issue

ASSW 2015	2
-----------	---

AFoPS Special Issue	3
---------------------	---

China's 1st Fixed-Wing	4
------------------------	---

Araon Arctic Voyage	4
---------------------	---

Medical Workshop	5
------------------	---

Dome A Progress	5
-----------------	---

New Publications	6
------------------	---

cooperation and AFoPS operation, aided by 9 working and 6 information papers.

The following highlights the key decisions made by the Members:

- The Committee endorsed and encouraged all 5 proposed AFoPS cooperative projects. The project proponents will be asked to report its progress to the Committee regularly.

IASC and SCAR. Accordingly, this will be communicated to the IASC-SCAR representatives for their internal considerations.

This new initiative of AFoPS was introduced to the ATCM XXXVIII in Sofia Bulgaria as an information paper which was welcome by the Parties and the SCAR President.

(Secretariat)

## ASSW 2015 Presents Roadmap for Future Arctic Research

The ASSW 2015 was successfully held from 23-30 April in Toyama with a total of 708 participants from 27 countries, under the auspices of IASC and co-organized by the Science Council of Japan. During the first 4 days, committee meetings of IASC and other Arctic organizations, including AFoPS, were held to discuss ongoing and new research projects, as well as the role of Arctic science in society, and new

strategies to promote interna-



*Prof. Chris Rapley's Keynote during the opening session (Photo: NIPR)*

tional cooperation. During the final 4 days, joint sessions of ICARPIII (International Conference on Arctic Research

Planning) and ISAR-4

(International Symposium on Arctic Research) were held. At the end, the ASSW2015 Conference Statement, outlining the future direction of Arctic research was announced.

(Prof. Kentaro Watanabe, NIPR / [kentaro@nipr.ac.jp](mailto:kentaro@nipr.ac.jp))

The full text of Toyama Conference Statement is available at:

[http://www.assw2015.org/program/pdf/ASSW\\_Conference\\_Statement\\_FINAL.pdf](http://www.assw2015.org/program/pdf/ASSW_Conference_Statement_FINAL.pdf)

## XII ISAES in Goa Concludes Successfully

The XII International Symposium on Antarctic Earth Science (ISAES) was held at Goa, India on 13-17 July, 2015. The symposium opened with an opening address, followed by an icebreaker event in the evening of 12 July at the Marriott Hotel, the venue of the symposium, located in the vibrant coastal city of Panjim in Goa.

The symposium featured a total of 11 plenary talks. Three parallel oral sessions for five days, in the morning and afternoon were arranged with more than 24 topics as the major part of the oral

presentations of the symposium. The two oral sessions were separated by a one and half



*MEOS Minister Vardhan opens XII ISAES (Photo: Examswatch.com)*

hour poster session for the first four days of the symposium after the mid-day meal break.

A wide range of topics were covered during the Symposium: The ice-sheet behavior, paleoclimate from multiple proxies, vertebrate evolution, meteorites and micrometeorites, issues of supercontinent reconstruction and evolution, southern ocean geological processes, and Holocene climate fluctuations with contributions from nearly 40 countries provided exciting scientific discussions and outcomes.

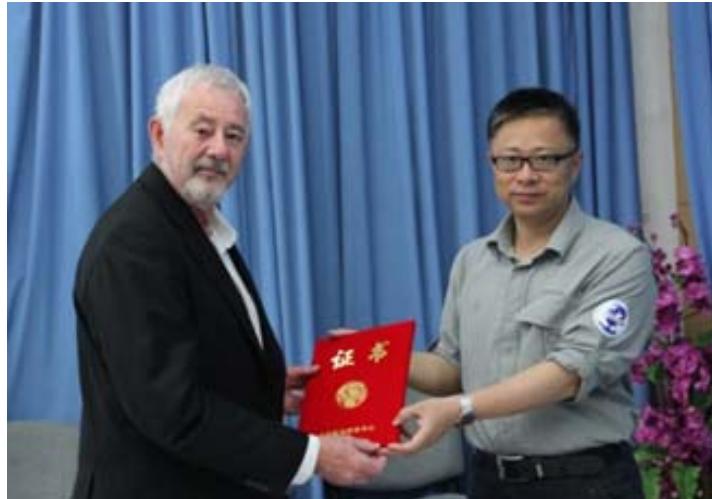
(Dr. Rahul Mohan, NCAOR / [rahulmohan@ncaor.gov.in](mailto:rahulmohan@ncaor.gov.in))

# APS Journal Launches International Editorial Board

The international editorial board of the journal Advances in Polar Science (APS), founded on 2 June 2015, consisted of 23 editors from America, Australia, China, Italy, Japan, Korea, Netherlands, New Zealand, Norway, and

Sweden, under the lead of the Co-Editors-In Chief, Prof. Huigen Yang, from Polar Research Institute of China, and Prof. Ian Allison from University of Tasmania, Australia.

The primary objective of APS is to publish the achievements



*Co-Editors-In Chief: Ian Allison (Left); Huigen Yang (Photo: PRIC)*

of fundamental research, applied research and high-technology research focused or based on the polar region, and to report the latest discoveries, inventions, theories and meth-

odologies in polar research. APS also publishes occasional "Special Issues" on specific polar research themes. APS is fully committed to the Open Access Initiative and will provide free access to all articles as soon as they are released and publishing in APS is free of charge thanks to the generous funding from the PRIC.

(Dr. Chen Bo, PRIC / [chenbo@pric.org.cn](mailto:chenbo@pric.org.cn))

Contact Information of *Advance in Polar Science*

Website: <http://journal.polar.org.cn/EN/volumn/current.shtml>

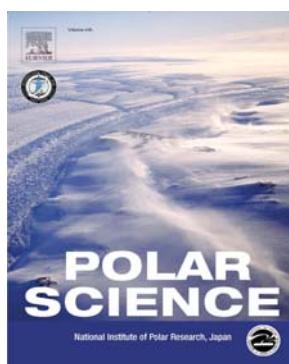
Submit online: <http://mc03.manuscriptcentral.com/apsci>

Email: [journal@pric.org.cn](mailto:journal@pric.org.cn)

## AFoPS Special Issue on Track

Editorial works are in progress for AFoPS Special Issue of Polar Science. To complete the review processes, manuscripts had to be submitted to the AFoPS SI by the end of August, editorial works are getting busier. There were more than 20 manuscripts submitted to the AFoPS SI as reported at the Special Meeting of AFoPS during ASSW2015 in April. The articles had not yet completed the review processes by the end of August would be passed to the normal volume of Polar Science, as announced at last

year's AFoPS AGM in Port Dickson. We hope to have more than 10 completed reviewed articles or almost completed in about a month and to see the Second AFoPS Special Issue published in December this year.



## NIPR holds 6th Symposium on Polar Science

The Sixth Symposium on Polar Science will be held from 16-19 November at NIPR, Tachikawa. The NIPR is organizing this annual symposium to present and promote a wide variety of polar scientific research and interdisciplinary studies. The symposium includes a special session, the theme of which is "Warming in the Arctic and Its Influences – GRENE Arctic Climate Change Research Project and the Next New Directions". Abstract submission will be open from 4 August to 4 September.

Please the web page for details: [www.nipr.ac.jp/symposium2015/e/](http://www.nipr.ac.jp/symposium2015/e/)

# China to Deploy First Fixed-Wing Aircraft for Antarctic Research

China's first fixed-wing science aircraft is targeted for deployment to Antarctica for its first mission in late 2015. This new BT-67 aircraft named Snow Eagle 601 is under the final scientific modifications in Canada and expected to be completed soon. China purchased the Basler BT-67 aircraft, which is capable of flying on research, rescue and transportation missions at low temperatures.

The aircraft will be equipped with ice penetrating radar as

well as gravity sensing and mag sensing equipment to aid the scientific evaluations. The project has gone through 5 years and is a joint effort of PRIC, Basler Turbo Conversions, Lake Central Airways and the University of Texas.

The joining of Snow Eagle 601 will bring up both the research range and logistic support mode to a new dimension.

(Dr. Li Xiaohao, PRIC / [lixiaohao@pric.org.cn](mailto:lixiaohao@pric.org.cn))



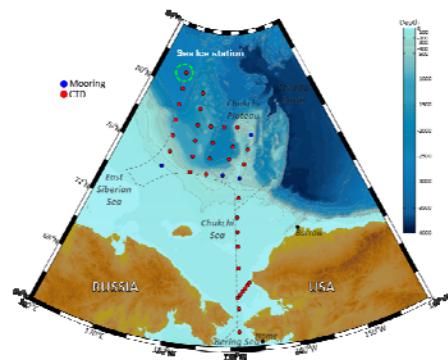
A new BT-67 waits for its first Antarctic mission in late 2015 (Photo: PRIC) .

## 1st Leg of Araon's Arctic Voyage Just Beginning

The first leg of IBRV Araon's Arctic voyage begins on 1 through 22 August planned to sail over the Bering, Chukchi, and East Siberian Seas. As a key part of the Korea-Polar Ocean in Rapid Transition (K-Port) project, the first leg will concentrate on the survey and research in the fields of environmental (biological, physical,

and chemical) oceanography, atmospheric science, and geophysics.

Forty four researchers from 6 countries (US, UK, France, Spain, Japan, China, and Korea), headed by the Chief Scientist, Dr. Eun Jin Yang will participate in the first phase of Arctic voyage.



Araon Cruise Plan for Arctic

## KOPRI Asian Polar Science Fellowship Awardee Named

The Korea Polar Research Institute (KOPRI) has named 6 recipients of the Asian Polar Science Fellowship 2015 and is now preparing to welcome the Asian polar scientists.

Institute Visiting Program's participants are: Sheeba Nettukandy (NARC), Hari Dat-

ta Bhattarai (Research Institute for Bioscience and Biotechnology), Noor Haza Fazlin Hashim (Univ. Kebangsaan Malaysia), and Tomoya Obase (Tohoku Univ.).

For Field Research Program, the following scientists will conduct IBRV Araon-based

research in Arctic waters:

Eri Yoshizawa (Tokyo Univ. of Marine Science and Technology) and Kenta Suzuki (Hokkaido Univ.)

(Dr. Hyoung Chul Shin, KOPRI / [hcshin@kopri.re.kr](mailto:hcshin@kopri.re.kr))

## Antarctic Medical Workshop Held in Japan

Workshop on Antarctic Medical Research and Medicine 2015 was successfully held on 11 July at NIPR with 32 participants including Prof. Prakash Kotwal of All India Institute of Medical Sciences. 16 presentations were given by JARE medical doctors, collaborative medical researchers etc. using tele-conference systems via INTEL-SAT (to Syowa) and Skype (to

Bharati Indian station). Psychological research results on over-

ture was given by Prof. Masa-sashi Tanaka of Fukushima

Medical University from the viewpoint of Biometeorology. We hope to hold next year's workshop on 16 or 23 July next year with more overseas participants.



*Participants of the Workshop (Photo: NIPR)*

(Prof. Kentaro Watanabe, NIPR /

[kentaro@nipr.ac.jp](mailto:kentaro@nipr.ac.jp))

wintering personnel attracted interests of participants. A lec-

## Dome A Deep Ice Core Drilling Progress Report

The deep ice core drilling system has been successfully applied at Kunlun Station (Dome A, Antarctica) during CHINA-RE-31. As the first stage of the drilling plan, we obtained an ice core sample of 303m length. Furthermore, the drill system was maintained and the related equipment were installed, including electricity supply system, ice core processing line, ice chip centrifuge, Ventilator, Hole liquid supplying system

and so on.



*9 drillers holding the first core of season 2014/2015, which length is 3.85m (Photo: PRIC)*

Dome Argus deep ice core drilling is an ongoing Chinese deep ice coring project. The main goal of this project is to

drill through the 3100 m ice sheet at Dome Argus to examine the last 1 million years of Earth's climate history. In addition, biological signals contained in cores will be analyzed, and try to get more information for better understanding of bottom ice and bedrock in-

teraction.

(Dr. An Chunlei, PRIC / [anchunlei@pric.org.cn](mailto:anchunlei@pric.org.cn))

# A New Species of Genus *Trigonium* Proposed

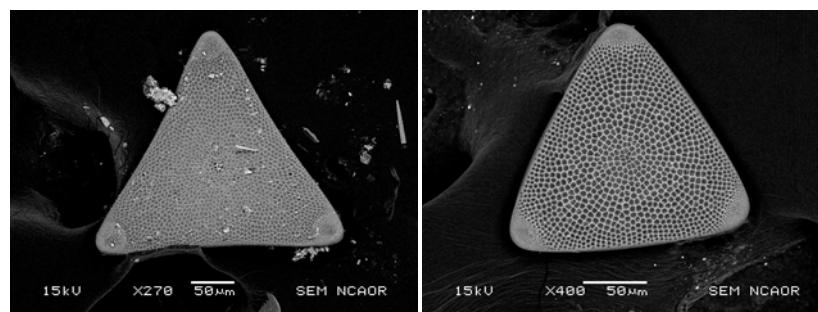
*Trigonium curvatus* sp. nov. and *Trigonium arcticum* (Bacillariophyceae) from the surface sediments of Prydz Bay, East Antarctica

Micropaleontology Volume 61, No. 3pp. 185-192 - online 09 May 2015

A new species of genus *Trigonium* namely *Trigonium curvatus* from the surface sediments of coastal Antarctica has been proposed in the present study. A comparative study was conducted between *Trigonium curvatus* and *Trigonium arcticum* to find out the differential morphologi-

cal characters. *Trigonium curvatus* is differentiated from the earlier described *Trigonium arcticum* on the basis of valve morphology such as the presence of clustered rimoportulae at the center of the valve, con-

rimoportulae have absent or inconspicuous, sides of the frustules are convex/straight with larger areolae which appear to be flattened with more pores encircling it. Both species show basic resemblance to ge-



(Left) *Trigonium curvatus*-External view of the frustule showing concavity at the sides. Scale bars = 100 $\mu$ m; (Right) *Trigonium arcticum*- External view of the frustule displaying convex to straight edges. Scale bars = 100 $\mu$ m (Photo: NCAOR)

cave sides of the valve, smaller areolae, constricted structure of areolae and fewer pores surrounding areolae. On the contrary, in *Trigonium arcticum*

nus *Trigonium* such as triangular valve structure, centrally radiating areolae and valve apices comprised of pseudocelli. Hence, it is proposed that

*Trigonium curvatus* is different from the originally described

*Trigonium arcticum* and is a new species of genus *Trigonium*. (Abhilash Nair, NCAOR / abhi00777@gmail.com)

## First *Marinomonas* Genome from Arctic Sea Ice

Psychrotrophic *Marinomonas* sp. BSi20584 was isolated from the top 10 cm of an ice core sampled from the high Arctic Canada Basin, during the Second Chinese National Arctic Research Expedition in 2003. The draft genome consisted of 4,848,582 bp, with G + C content of 42.6%. The genomic

such as maintenance of mem-

fewer rRNAs than other

Contents lists available at ScienceDirect  
Marine Genomics  
journal homepage: [www.elsevier.com/locate/maren](http://www.elsevier.com/locate/maren)

Genomics/Technical resources  
Draft genome of *Marinomonas* sp. BSi20584 from Arctic sea ice  
Li Liao <sup>a</sup>, Xi Sun <sup>a,b</sup>, Yong Yu <sup>a</sup>, Bo Chen <sup>a,\*</sup>  
<sup>a</sup> SOA Key Laboratory for Polar Science, Polar Research Institute of China, Shanghai 200136, China  
<sup>b</sup> College of Biengineering, East China University of Science and Technology, Shanghai 200237, China

ARTICLE INFO  
Article history:  
Received 15 February 2015  
Received in revised form 31 March 2015  
Accepted 31 March 2015  
Available online xxxx  
Keywords:  
Arctic  
Sea ice  
*Marinomonas*  
Polar regions  
Genome

ABSTRACT  
Life surviving in extremely cold frozen environments has been largely uninvestigated. Here we described the draft genome of *Marinomonas* sp. BSi20584, isolated from Arctic sea ice in the Canada Basin. The assembled genome comprised 4.85 Mb, with the G + C content of 42.6%. Single copy of rRNA operon was detected, which may increase fitness in cold and nutrient-limited environment. In addition, BSi20584 may also use universal strategies for cold adaptation as indicated by the genome. Abundant genes responsible for decomposition of aromatic hydrocarbons were detected, which suggested potential biotechnological applications. The first genomic analysis of *Marinomonas* in Arctic sea ice provided primary genetic information and encouraged further research in comparative genomics and biotechnological applications.

The findings have been published in Recent issue of Marine Genomics Journal.

*Marinomonas* strains from non-polar regions. In addition, the genome suggested potential abilities in degradation of aromatic compounds.

In summary, the genome revealed genetic adaptation to the extreme Arctic sea ice and potential applications in biotechnology.

(Dr. Chen Bo, PRIC / chen-bo@pric.org.cn)

analysis showed that strain BSi20584 had genetic capacity for adaptation to the cold and salty niche in Arctic sea ice

brane fluidity, accumulation of compatible solutes, and a novel heat shock protein as well as