

NO. 102  
ISSUE 1/2014

# ASIAN Geographic

ASIA WITHOUT BORDERS

## Great Asian Journeys

The northern voyage  
30,000 years ago

An Asian link  
50 million years old

+  **Asian  
Geographic**  
**passport**  
No. 30  
Issue 1 | 2014



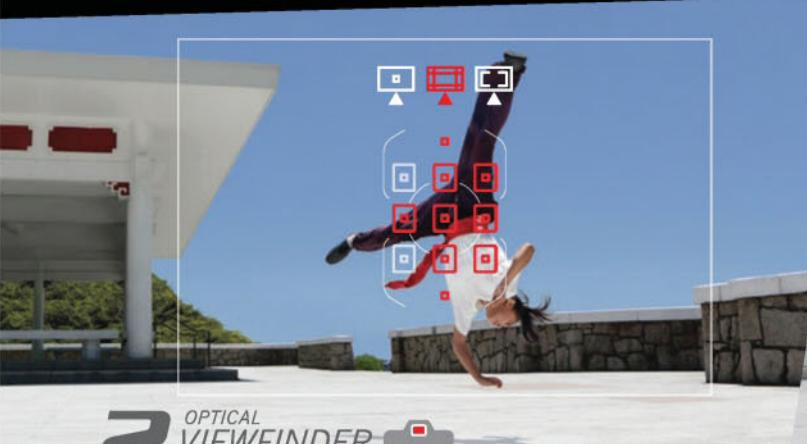
**EOS**  
DIGITAL

**Canon**

Delighting You Always



**SURPASS**  
**3 WAY SHOOTING**  
enhanced by **Dual Pixel CMOS AF**



**2** OPTICAL  
VIEWFINDER  
SHOOTING



**3** REMOTE  
LIVE VIEW  
SHOOTING\*

# EOS 70D

Enjoy New Versatility with  
Expanded Shooting Possibilities

The new EOS 70D innovative 3-way shooting adds new perspectives to your shooting repertoire. At the heart of the technology is the Dual Pixel CMOS AF that delivers high-speed, precise auto-focusing in Live View mode for stills and movie recording. The EOS 70D. Revolutionary in every way.

\* WiFi function subject to availability in your region

**EF90**  
million

90 million  
EF Lenses  
manufactured  
from 1987-2013

**#1**  
DSLR  
IN ASIA

GFK Asia covers China (20 Cities), Hong Kong, India (10 Cities), Indonesia (7 Cities), Malaysia, Philippines, Singapore, Korea (6 Regions and Online), Taiwan, Thailand and Vietnam.

All  
Cross-type  
point  
**19AF**

**20.2** MEGA  
PIXELS  
CMOS

Up to  
**7.0**  
Frames  
Per Sec

**WiFi**  
CERTIFIED



Canon Imaging Asia



Canon Asia

[www.canon-asia.com/eos70d](http://www.canon-asia.com/eos70d)

Insist on an original warranty by your local sales office. South and Southeast Asia Regional Headquarters: Canon Singapore Pte. Ltd. | 1 Harbourfront Avenue #04-01 Keppel Bay Tower Singapore 098632 | [www.canon-asia.com](http://www.canon-asia.com)

# Journey Home

By Rabindranath Tagore

The time that my journey takes is long and the way of it long.

I came out on the chariot of the first gleam of light, and pursued my voyage through the wildernesses of worlds leaving my track on many a star and planet.

It is the most distant course that comes nearest to thyself, and that training is the most intricate which leads to the utter simplicity of a tune.

The traveller has to knock at every alien door to come to his own, and one has to wander through all the outer worlds to reach the innermost shrine at the end.

My eyes strayed far and wide before I shut them and said "Here art thou!"

The question and the cry "Oh, where?" melt into tears of a thousand streams and deluge the world with the flood of the assurance "I am!"

**RABINDRANATH TAGORE** (1861–1941) was a Bengali poet, author, composer and painter. Best known for his poetry, he was awarded the Nobel Prize in Literature in 1913, becoming the first non-European to do so.

World's greatest journey: Hopping on the Trans-Siberian train (Транссибирская магистраль). The railway is the longest line in the world, reaching into Mongolia, China and North Korea and connecting Moscow with the Russian Far East and the Sea of Japan (East Sea). It is still being expanded

**Canon**

Delighting You Always



# *EF50mm f/1.4 USM Lens*

LIGHT AND SUBTLE

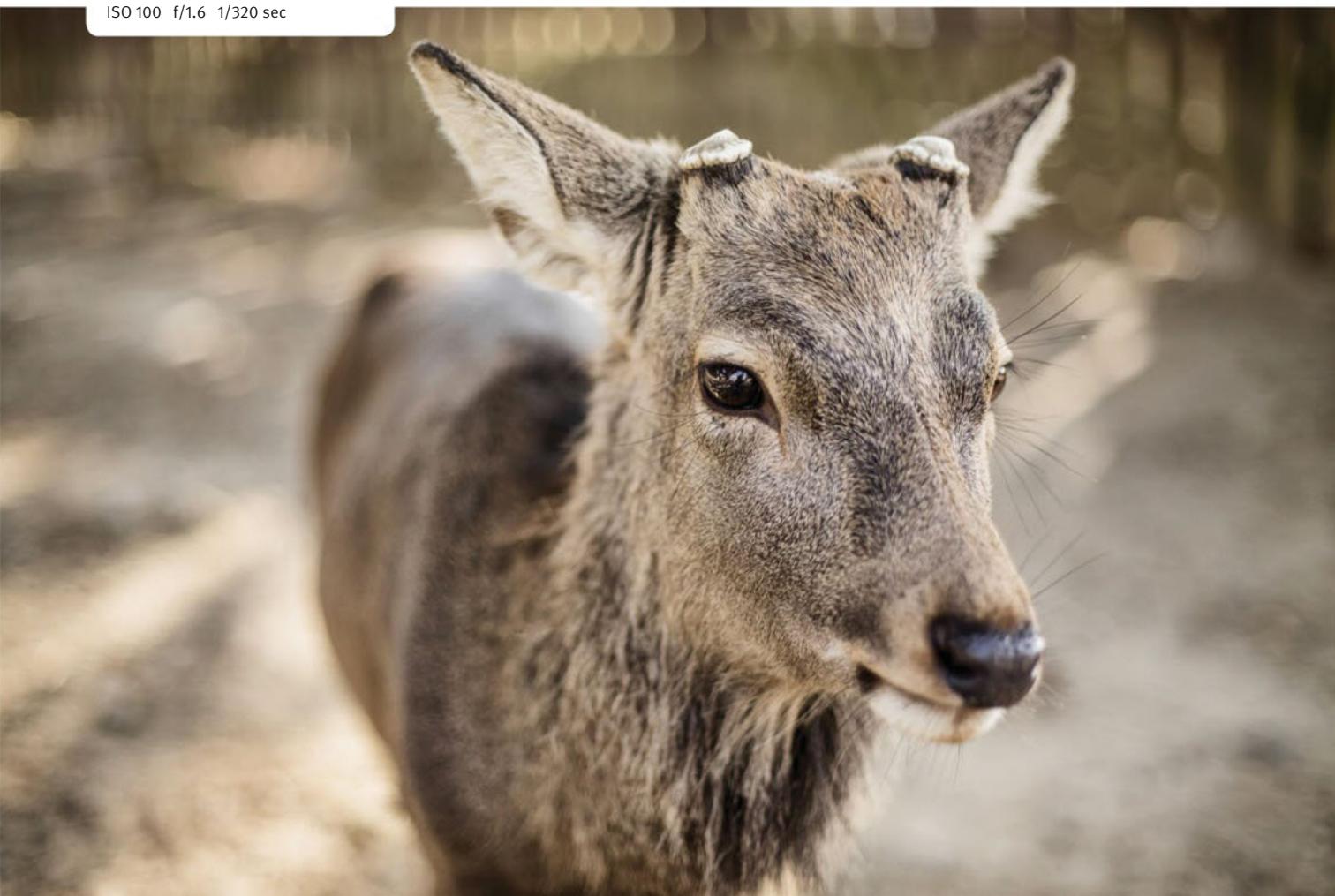
Looking for an appropriate lens for travel photography? Should it be ultra wide-angle or a long-range telephoto? What about the weight that needs to be luggered around?

If weight is a factor, then the Canon EF50mm f/1.4 USM Lens is ideal for general photography. It is a lightweight lens that gives a wider angle of view and best of all, it allows shooting in low light.

Nara Prefecture, Japan: This deer species is also known as the "bowing deer", as they bow their heads before being fed with "deer cookies".

EOS 6D | EF50mm f/1.4 USM Lens

ISO 100 f/1.6 1/320 sec



## AN ESSENTIAL GUIDE TO GREAT LENSES

Exploring Siem Reap is a lot more fun when not hampered by heavy equipment. This was the first time I actually visited Cambodia without bringing my telephoto zoom lens. Instead of worrying about losing the opportunity to get the exact frame, it forced me to think more carefully about the frame itself.\*

**EOS 6D | EF50mm f/1.4 USM Lens**  
ISO 400 f/11 1/2000 sec

Most people tend to associate the Canon EF50mm f/1.4 USM Lens with street photography, as it is small and inconspicuous, allowing for candid shots of human subjects without drawing too much attention.

Here, I explored the streets of Ho Chi Minh City, as well as the countryside in Japan, with the Canon EF50mm f/1.4 USM Lens. As I took in the sights around the Notre-Dame church in District 1, I found the Canon EF50mm f/1.4 USM Lens a perfect lens for shooting my subject subtly, compared to, say, a huge zoom lens with an f/2.8 constant aperture. This was also perfect for capturing images of the deer in Japan.

A bite for his deer: A tourist at Kōfuku-ji (興福寺) in Nara (奈良) creatively feeds a free roaming deer with Shika-senbei (鹿煎餅).

**EOS 6D | EF50mm f/1.4 USM Lens**  
ISO 100 f/1.6 1/6400 sec

A group of youths doing stunts on their BMX bikes: I wanted to get the perfect shot with the right background, so I decided to try panning. Instead of shooting at shallow depth of field, I increased my aperture and lowered my shutter speed. The end result was a more interesting composition.

**EOS 6D | EF50mm f/1.4 USM Lens**  
ISO 320 f/14 1/40 sec

\*Do not try this stunt if you are worried about your camera being too close to water. For Triston, the camera and lens are just tools to express his art and he is always prepared to send his camera for repair whenever needed.



# Canon

Delighting You Always



## EF85mm f/1.8 USM Lens

PRECISION AT HIGH SPEED

The Canon EF85mm f/1.8 USM Lens is definitely one of the hot favourites for shooting portraits. Traditionally, studio photographers used the Canon EF85mm f/1.8 USM Lens to shoot half body and three-quarter shots of models for their composite cards. Nowadays, many travel photographers have abandoned the Canon EF85mm f/1.8 USM Lens in favour of new telephoto zoom lenses with a wide-open aperture (f/2.8). This allows them the flexibility of selecting a longer zoom with no compromise on the soft blurred background effect they get shooting with the biggest aperture.

The Thai Garuda motif, here, outside the Ubosoth, the main building of Wat Phra Kaew, Grand Palace, Bangkok.

EOS 6D | EF85mm f/1.8 USM Lens  
ISO 100 f/1.8 1/2000 sec



AN ESSENTIAL GUIDE TO  
**GREAT LENSES**

---

As a travel photographer, I believe in carrying the lightest lens whenever possible and not compromising on quality. That's why I love the Canon EF85mm f/1.8 USM Lens – it delivers critically sharp images even when shot wide open. If I need to shoot something further away, I would choose to use another fixed focal telephoto lens or bring along the Canon EF70–300mm f/4–5.6L IS USM. Most of the time, I don't even need a super long telephoto lens, as I love to be close to my subjects to get the intimacy I'm after.



A Vietnamese lady dressed in áo dài, the Vietnamese national costume, outside the Opera House in Ho Chi Minh City.

—  
**EOS 6D | EF85mm f/1.8 USM Lens**  
ISO 100 f/1.8 1/2500 sec

I decided to visit the Damnoen Saduak Floating Market, 1.5 hours from Bangkok. On this journey, I took only my Canon EOS 6D attached to the EF85mm f/1.8 USM Lens. Thanks to the sudden downpour, I was treated to a sudden array of colours. Instead of shooting wide open, I decided to shoot at f/7.1 to have enough depth-of-field to show the boat person, the signage and the raindrops.

—  
**EOS 6D | EF85mm f/1.8 USM Lens**  
ISO 800 f/7.1 1/125 sec

**Canon**

Delighting You Always



The Chinatown area in Singapore usually gets more colourful during the Mid Autumn Festival as thousands of lanterns are being lighted up for the festive seasons. As a result, traffic tends to get heavier during this time.

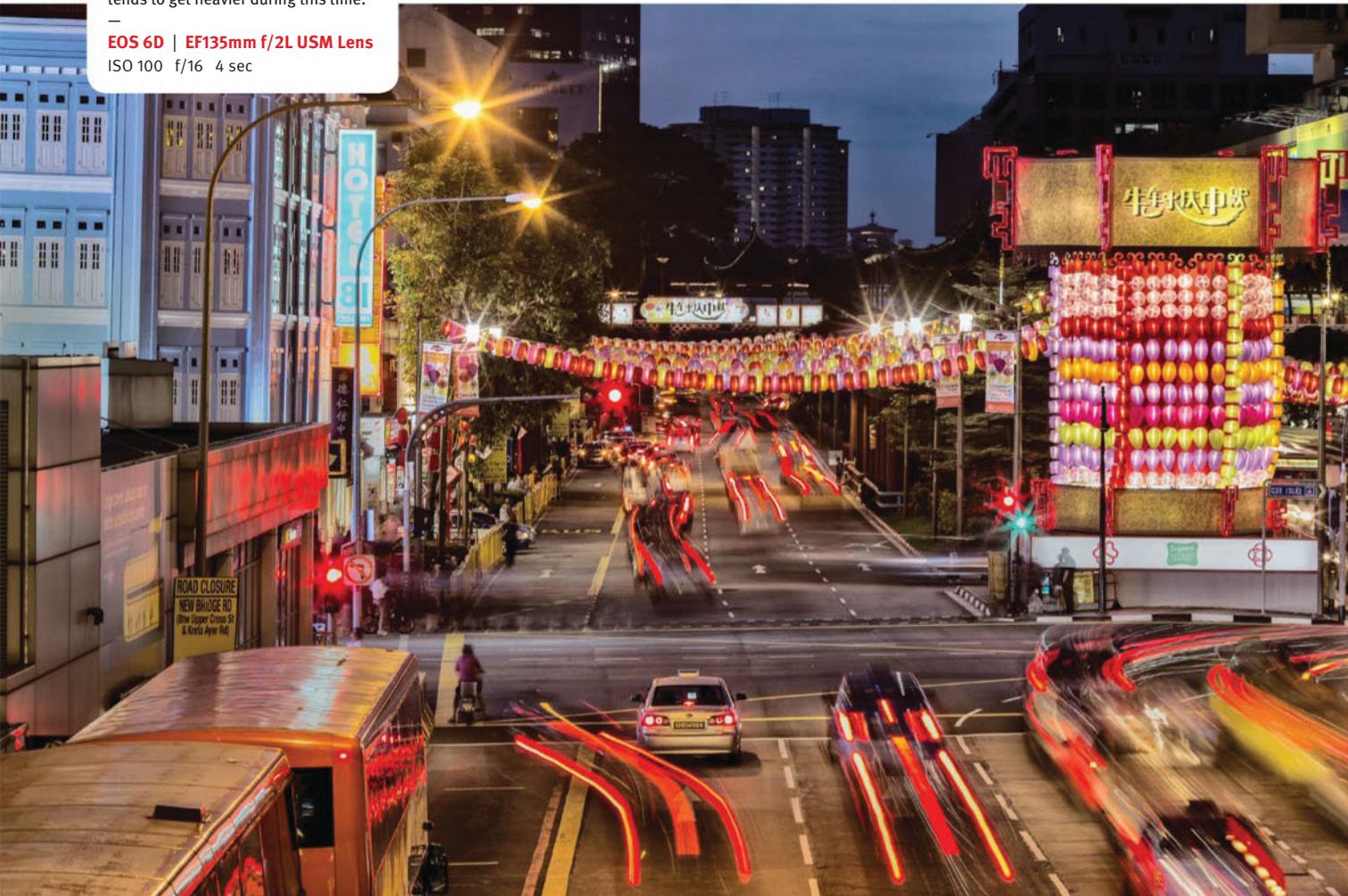
EOS 6D | EF135mm f/2L USM Lens  
ISO 100 f/16 4 sec

# *EF135mm f/2L USM Lens*

SHARPEST-EVER AT LONG RANGE

What's a good lens for corporate headshots? The Canon EF135mm f/2L USM Lens would most likely have been the choice in the past. It tends to compress the scene more and therefore gives you very little distortion. For example, a subject's nose would appear bigger when shot with a Canon EF50mm f/1.4 USM Lens, compared to the Canon EF135mm f/2L USM Lens.

I use the Canon EF135mm f/2L USM Lens as my main lens when I go out to shoot something candid on the street. With fleeting moments and physical barriers, it is always good to have a longer telephoto lens to help things along.



AN ESSENTIAL GUIDE TO  
**GREAT LENSES**



*The only one  
you need*

The Canon EOS 6D is the perfect camera for travel photography. It shoots full frame, it's not overly bulky and it focuses fast.

Two of the EOS 6D's most useful features are Wi-Fi and GPS tagging. With the GPS tagging function, you don't have to record the exact names of the places where you shoot, which is especially helpful when the main language of the country you're in is not English. All you need to do to find the precise location where an image was taken is Google the coordinates. With the Wi-Fi interface on the EOS 6D, it's a simple matter to hook up your mobile phone, turning it into a remote control for your camera.

Overall, the EOS 6D manages to pack all the functions you need, plus a few that make life on the road that bit easier, into a light and portable package. Canon have made it a breeze to create top-notch images without burning too big a hole in your pocket – or straining your back.

**CANON EOS 6D KEY FEATURES**

- Full-frame 20.2 Megapixel sensor
- Tough, lightweight construction
- Max ISO 25,600 (expandable to ISO 102,400)
- 11-point AF sensitive down to -3EV
- Full-HD video



The photographer captures his own son having fun with his older brother's spectacles to showcase the f/2 feature of this great lens.

—  
**EOS 6D | EF135mm f/2L USM Lens**  
ISO 2000 f/2 1/160 sec

It was raining consistently in Siem Reap for a number of days, flooding some of the roads. On a road trip in a local vehicle I turned around to capture a motorist "flying through" the flooded roads. The shallow depth-of-field of the 135mm was ideal for this shot as I could isolate the subject from the background. It was crucial for me to shoot at a high shutter speed so that I could freeze the motion of the driver, as well as the water splash.

—  
**EOS 6D | EF135mm f/2L USM Lens**  
ISO 320 f/4.5 1/800 sec



# ASIANGeographic ASIA WITHOUT BORDERS PHOTOGRAPHY COMPETITION 2014

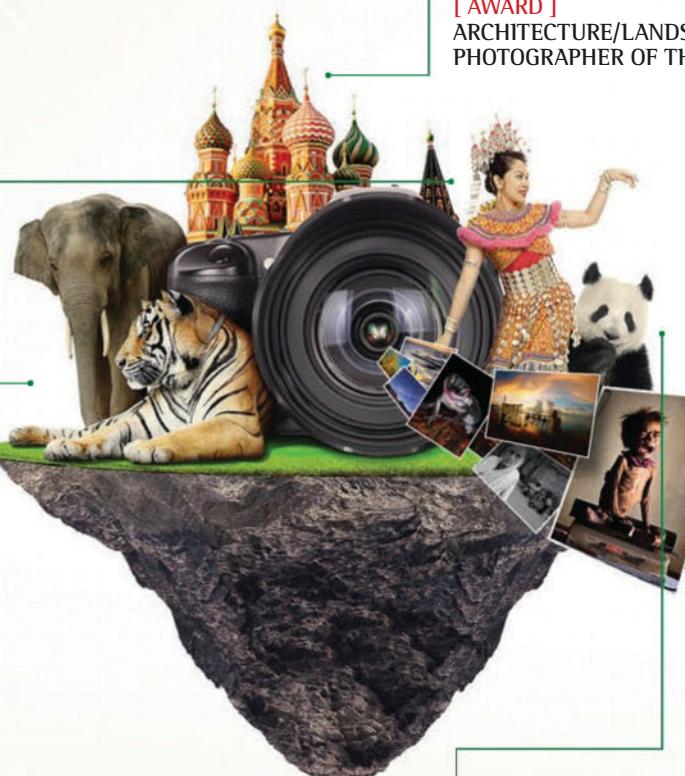


## PEOPLE OF ASIA

This category takes in portraits and persons in Asia, reflecting one of Asia's greatest offering, the warmth and beauty of its people.

### [ AWARD ]

PEOPLE PHOTOGRAPHER  
OF THE YEAR 2014



## ARCHITECTURE/ LANDSCAPE OF ASIA

From the most iconic Asian representation to the most distinctive of Nature's architecture, the category welcomes the best look at Asia's structural designs, manmade or otherwise.

### [ AWARD ]

ARCHITECTURE/LANDSCAPE  
PHOTOGRAPHER OF THE YEAR 2014



## WILDLIFE OF ASIA

Some of the most unique and rarest of wildlife exist in Asia, topside and underwater. This category looks at some of the best wildlife found in the vast region of Asia.

### [ AWARD ]

WILDLIFE PHOTOGRAPHER  
OF THE YEAR 2014

## SPECIAL CATEGORY: ENVIRONMENT

One of the most important constitutions of ASIAN Geographic is conservation. Paying homage to this very important aspect of the geographic, this category hopes to highlight some of the most relevant conservation issues. Photos must be taken within the Asian region.

### [ AWARD ]

ENVIRONMENTAL PHOTOGRAPHER  
OF THE YEAR 2014

# THE BIG PICTURE



2007-2013  
Finalists and Winners

[AsiaWithoutBorders.com](http://AsiaWithoutBorders.com)

[facebook.com/AsiaWithoutBorders](https://facebook.com/AsiaWithoutBorders)

# ASIAN Geographic

## EDITORIAL

### PUBLISHER/EDITORIAL DIRECTOR

John THET • [thet@asiangeo.com](mailto:thet@asiangeo.com)

### SENIOR EDITOR

Lunita S V MENDOZA • [lunita@asiangeo.com](mailto:lunita@asiangeo.com)

### FEATURES EDITOR

Selina TAN • [selina@asiangeo.com](mailto:selina@asiangeo.com)

### CONTRIBUTING EDITOR

Ian SELDRUP • [ian@asiangeo.com](mailto:ian@asiangeo.com)

## ADVERTISING & MARKETING

### SENIOR ADVERTISING/MARKETING MANAGER

Elysee TAN

### ADVERTISING/MARKETING MANAGER

Cassandra Ann DRAGON •

[cassandra@asiangeo.com](mailto:cassandra@asiangeo.com)

### EVENTS/ MARKETING MANAGER

Colin LIN • [colin@asiangeo.com](mailto:colin@asiangeo.com)

### BRAND MARKETING MANAGER

Christiana WU

## DESIGN

### SENIOR GRAPHIC DESIGNER

ENG Chun Pang • [chun pang@asiangeo.com](mailto:chun pang@asiangeo.com)

### GRAPHIC DESIGNER

Paul DIVINA • [paul@asiangeo.com](mailto:paul@asiangeo.com)

### CONTRIBUTING GRAPHIC DESIGNER

Eric WONG • [eric@asiangeo.com](mailto:eric@asiangeo.com)

### WEB/SENIOR ART DIRECTOR

Ralph HÄRING • [ralph@asiangeo.com](mailto:ralph@asiangeo.com)

## CIRCULATION

### SENIOR CIRCULATION/DISTRIBUTION MANAGER

Victor OW • [victor@asiangeo.com](mailto:victor@asiangeo.com)

### CIRCULATION/ADMINISTRATION EXECUTIVE

Sheila DEVI • [sheila@asiangeo.com](mailto:sheila@asiangeo.com)

### TRAFFIC/PRODUCTION EXECUTIVE

Kamille PANLAQUI • [kamille@asiangeo.com](mailto:kamille@asiangeo.com)

## FIELD EDITORS

Doug Perrine • USA

YD Bar-Ness • Australia

Oliver Benjamin • Thailand

Renyung Ho • Singapore

Scott Bennett • Canada

Stephen Burrows • Hong Kong

Dr Rachel Einav • Israel

Zann Huizhen Huang • Middle East

## SCIENTIFIC ADVISORS

Dr Simon Pollard • Dr Doug Fenner •

Dr Nicolas J Pilcher • Dr Dionysius Sharma •

Dr Carl Grundy-Warr

## EDITORIAL INTERNS

Shreya ACHARYA • Shreya GOPI

ASIAN Geographic magazine is a recipient of the Ngee Ann School of Engineering Internship Programme/Sponsorship of Industrial Projects appreciation award for the academic year 2010/2011.



Editorial Submissions • [editor@asiangeo.com](mailto:editor@asiangeo.com)

Photo Submissions • [photo@asiangeo.com](mailto:photo@asiangeo.com)

Subscriptions • [sub@asiangeo.com](mailto:sub@asiangeo.com)

Advertising • [ads@asiangeo.com](mailto:ads@asiangeo.com)

Feedback • [info@asiangeo.com](mailto:info@asiangeo.com)



### TIMELESS

#### 1 Journey Home

### PICTURESQUE

#### 16 Asia's Endless Allure

### REFLECTIONS

#### 26 The World's First Dedicated High-Speed Rail Line

### REVEALED

#### 28 Finding Madagascar

### EXPLORATION

#### 72 Down the Track

### MEMORIES

#### 95 Trailing Tea

### ICON

#### 96 Over the Silk Horizon

### THE GEOGRAPHIC

#### 44 From Asia to the Americas

The supercontinent of Pangaea gave rise to a common ecological heritage linking Asia and the Americas, engendering a great exchange of species. Dogs, despite being largely acclimatised to the cold climate of Alaska, in fact originated from Asian lands, only later migrating to North America, while the dawn redwood, a native deciduous tree of China, has had its origins traced back to the USA.

BY YD BAR-NESS

### WILDLIFE

#### 50 Tiny Trails

Fringed by lush vegetation, variegated plant life and an eclectic community of wildlife, these nature trails – developed on different island gems of Asia – are a result of deliberate efforts to conserve the region's precious biodiversity. We meander through this network of footpaths and learn how the roles played by both biotic and abiotic components provide a framework through which native species can continue to flourish.

### CONSERVATION+CARE

#### 88 A Lifelong Journey

Saving the Asian elephant has already been a decades-long journey for Raman Sukumar, an Indian conservation scientist who pioneered the establishment of sanctuaries and corridors in his home country. Yet his work is far from complete. As habitats continue to dwindle, and elephants are impelled to access cultivated areas, the confrontations between man and beast are putting increasing pressure on Asia's gentle giants.

BY RAMAN SUKUMAR



50





30

## 30 First People of the Arctic

Thousands of years have shaped the lives of the original peoples of the Arctic, true explorers and survivors of one of the world's most desolate environments. To this day, the natives of the Arctic, including one of the oldest tribes, the Chukchi, continue to thrive. This is a story of perseverance and fortitude, and one of humankind's greatest journeys.

BY BOGDANA VASHCHENKO

## 62 Walk on the Wild Side

Sandwiched between the mountains of the Hindu Kush and Karakoram, the Wakhan Corridor linking Afghanistan and China played a vital role in the 19th-century battle for control in Central Asia. Today, devoid of electricity and all extravagance, the Wakhan is a window into history centuries ago, save for a budding education scheme that might just change everything about the traditional Wakhi way of life.

BY SOPHIE IBBOTSON AND MAX LOVELL-HOARE

## 82 The Kingdom of Guge

In the early 1600s, a pair of Jesuit explorers, Father António de Andrade and Manuel Marques set foot on the sacred land of Tsaparang, establishing the first Catholic mission on Tibetan soil. To get there, they had to first traverse the upper Himalayan mountain ranges before descending into a treacherous valley via the Mana Pass. Little did they know that their exploits would ultimately catalyse the downfall of the grand Guge Kingdom.

BY AMARDEEP SINGH

### ON THE COVER

A tribesman from the Nenets, an indigenous people dwelling in the Russian Arctic

Photo: Dmitriy Nikonor (Russia)  
from the Global Arctic Awards  
[www.articawards.ru](http://www.articawards.ru)



## EDITOR'S NOTE

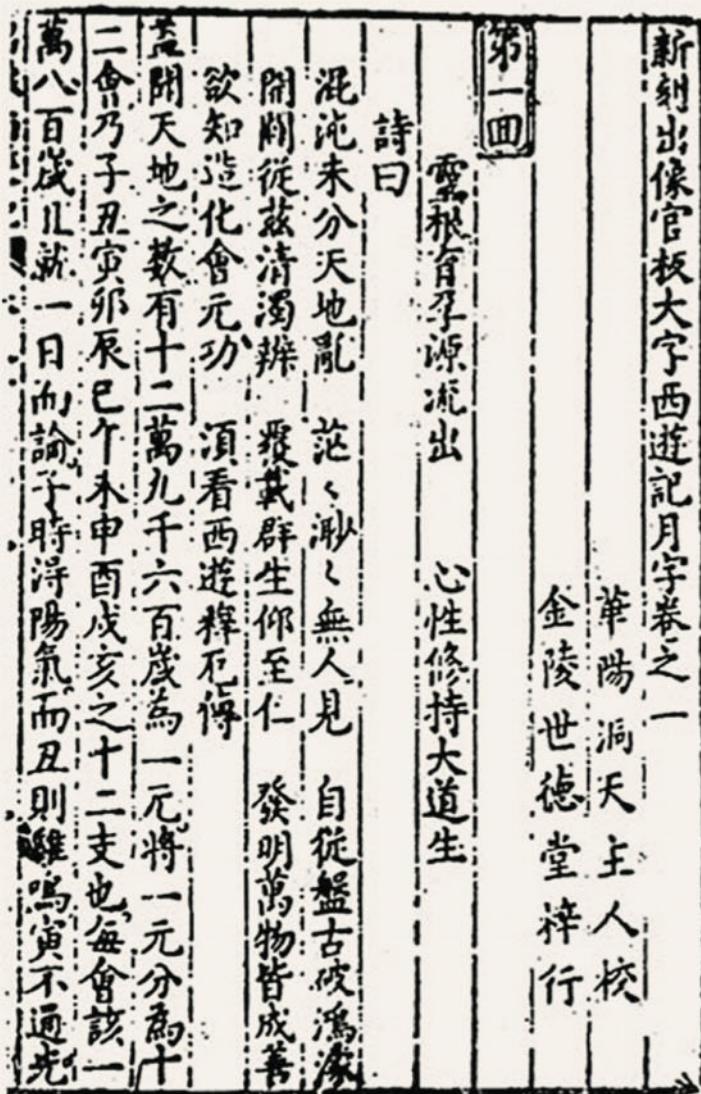
The earliest known edition: Written in the 16th century by Wu Cheng'en, *Journey to the West* is a Chinese novel belonging to the Ming Dynasty that fictionalises the account of the legendary pilgrimage to India by the Buddhist monk Xuanzang. It is one of the Four Great Classical Novels of Chinese literature

# Not all those who wander are lost.

— J.R.R. Tolkien, *The Fellowship of the Ring*

**Welcome** to the new *ASIAN Geographic*. It has been in the making for quite a while now and we are proud to present a whole new look at the geographic, save a very large inspiration from issues gone by, with a great new design concept as well. This issue, we pay homage to Asian journeys great and small, both giving epic experiences and memories that last several lifetimes. It reflects our own journey here at *ASIAN Geographic*, as we end an old feel and begin with a fresh look on earthy affairs that captivate, windswept contentions that continue to be the bane of Asia and fiery passions of environmental conservation. Have a stunning and meaningful year ahead!

Shalom, salam, om shanti,



ASIAN Geographic's editor received the prestigious Editor of the Year award at the 2011 & 2012 MPAS magazine awards.

**mpas**  
Magazine Publishers Association of Singapore



## DANCE OF ARABIA

The subtle, yet highly enjoyable Samrah makes for unique addition to your celebrations. Plus, it's a culture got all the way from Yemen.

Arabian Knights embodies this exotic move, never failing to fire up artistic passions onstage. Moving to rhythmic Arabic ditties and traditional poetry, the scent of Oud, coupled with Samrah's complex footwork, accentuates every celebratory spark.

An absolute crowd favourite, Arabian Knights deliver perpetual fascination and amazement for a wide range of audiences.

TO ENGAGE THE  
ARABIAN KNIGHTS  
OR MAKE INQUIRIES,  
CALL +65 97969219  
(e.arabianknights@gmail.com)

## bangra de sitare

### The magic behind Bollywood

The Stars of Bhangra has been the life of parties for decades. Born Bhangre De Sitare, there's nothing like Punjabi Bhangra folkloric dance to get a party started.

Bhangre De Sitare will give you an evolved line-up of psychedelic bhangra choreography – fused with Western dance styles and accompanied by popular, upbeat bhangra music.

Light up your night with spectacularly colourful costumes and catchy bhangra movements. It truly is a sight to behold.

Bhangre De Sitare will complete the picture of grandiose, joy and heightened celebration at casual and high profile events alike.

For inquiry on events, contact Ranjit at 96685212 (raj\_ranjit@yahoo.com)



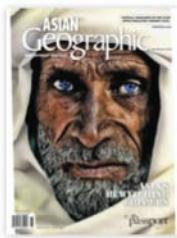
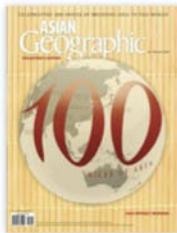


Dear Editor,

For the past few months, I have become a regular reader of *ASIAN Geographic* and it has impressed me a great deal. The articles are well written, with in-depth information, and the subject matter is well researched. **The 100th issue of the magazine (Issue 7/2013 No 100) was stunning, with informative articles on Asian languages and the interesting lifestyles of the people of far-flung Asian countries.**

I would also be interested to read articles on our oceans and on environmental protection, focusing on the preservation of the Earth's habitats. All the best to you and the team at *Asian Geographic*!

JAI ACHARYA, TECHNICAL DIRECTOR, SINGAPORE



Dear Editor,

I recently subscribed to *ASIAN Geographic* on the recommendation of a friend, and I must say, I really enjoyed my first issue, Asia's Bewitching Colours (Issue 5/2013 No 98). It is interesting to find out the different connotations of the colour red, besides it being favoured in Chinese culture. I never knew what it stands for in Iran, and that young girls are forbidden to dress in red.

I particularly enjoyed the story on the Dards. How fascinating it is to learn of the existence of such an isolated tribe, whose traditional clothing is so bright, colourful and unique. Their traditions are amazing! Thank you for bringing us this extremely enlightening edition.

EDITH NG, AUDITOR, SINGAPORE

Dear Editor,

I would like to offer my heartiest congratulations on *ASIAN Geographic*'s 100th issue (Issue 7/2013 No 100). Being a lover of languages myself, I was pleasantly surprised at this thematic approach. I have been speaking Cantonese for years, but know little about the history and evolution of this popular Asian dialect. Reading about the quirky features of something so familiar reminds me why I love this tongue so much.

Also, it is heartbreaking to find out that many of these languages will cease to exist in the next century. My goal is to pick up one of them, probably one that is more obscure. Till now, I can't get over the hauntingly beautiful image of the Tuva performing xoomei. The art holds such deep cultural significance the world should know about. I hope to enjoy their music live one day. *ASIAN Geographic*, thank you for wowing me again.

CHARLOTTE CHAN, TCM PRACTITIONER, HONG KONG

 *ASIAN Geographic* would love to hear from you. Write us at [info@asiangoeo.com!](mailto:info@asiangoeo.com!)\*

\*Letters may be edited for clarity and length

OUR EXPLORATION AND CONSERVATION PARTNERS





HISTORY

#1 reality series in the US

# DUCK DYNASTY®

THURSDAYS AT 10PM



# Asia's Endless Allure

## GETTING THE BIG PICTURE

ASIAN Geographic celebrates over a decade's worth of stunning photography from our very own Asia Without Borders Photography Competition. Each and every year, we're wowed by the quality of the entries and the creativity of the participants. Here are some of the best we've seen so far.

### Muddy Fun MYANMAR

The graphic element of the photograph strongly appealed to judge Triston Yeo, who felt that the joy of the children was well depicted.

U Kyaw Win Hlaing | Myanmar

GRAND  
PRIZE  
WINNER



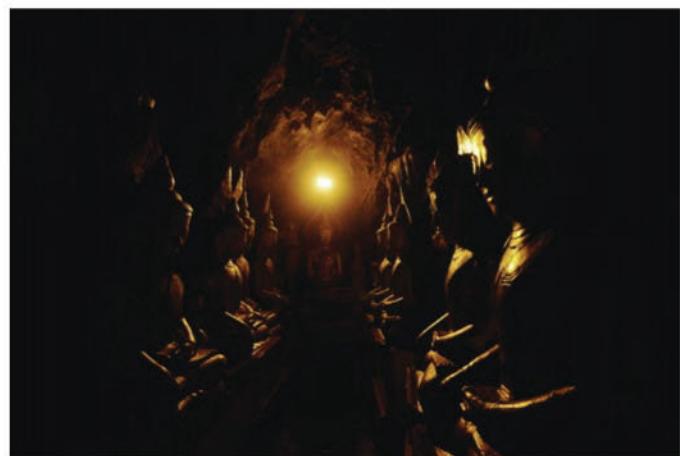




### The Catch THAILAND

Awarding the photo the maximum of 10 points, Triston Yeo commented that he would have loved to visit the site where the photo was taken.

Lim Swee Hoe | Malaysia  
Category Winner



### Quiet Peace MYANMAR

Ken Chua | Singapore  
Honourable Mention



**Reflection of the Buddhist Monks** **MYANMAR**

Wai Aung | Singapore  
Honourable Mention



**Misty Morning** **MYANMAR**

Aung Pyae | Myanmar  
Honourable Mention





**Gypsy Girl** BANGLADESH

K M Asad | Bangladesh  
Honourable Mention



**Ratu Dangu Duta** INDONESIA

James Morgan | United Kingdom  
Honourable Mention





**Laughter BANGLADESH**

Judge Manuel Librodo commented on how cleverly taken the photograph was, in spite of its subtlety.



Shaikh Mohir Uddin | Bangladesh  
Category Winner



## Japanese Macaques JAPAN

Manuel Librodo admired how the photographer managed to capture the emotions of the macaques, while Triston Yeo commented that the falling snow looked beautiful.

Michel Hagege | France  
Category Winner



**PICTURESQUE**

Asia Without Borders Photography Competition 2013



**Seagulls** MYANMAR

Arthur Teng | Malaysia  
Honourable Mention



**Fight for Survival** INDIA

Satpal Singh | India  
Honourable Mention

Professional photographers and photography enthusiasts come together to share one common passion: appreciating great pictures.

### The Sweetest Moment

With a perfect score of 10 from Manuel Librodo, this was a photograph that the judges felt was emotive and had beautiful light, colours and composition.

Reuben Foong | Singapore  
Category Winner



Set in a cosy boutique studio located in the culturally rich Ann Siang Road in the heart of Singapore, *ASIAN Geographic*'s 2013 Asia Without Borders Photography Competition saw image-makers of all stripes enjoy a thrilling showcase of artistic talent from around the world.

The culmination of a long and challenging process to find the year's best photographs from thousands submitted from every corner of the globe, the open judging event invited guests to witness an esteemed panel of judges decide the fates of competitors vying for the evening's top prizes – and the recognition that accompanies winning one of the region's most prestigious photography contests.

A panel of six lent their expertise in the judging of submissions across four categories: "Icons of Asia", "People of Asia", "Wildlife of Asia" and the Youth Category. The judging panel comprised David Tay, President of the Photographic Society of Singapore; Steven Yee, photography lecturer at SIM University; Ryan Wong, ambassador for the UK's prestigious Master Photographers Association; Carol Lim, visual communications expert and regional marketing manager at Canon Singapore; and multi-awarded and internationally published photographers Manuel Librodo and Triston Yeo.

Enjoying a range of delicious canapés served throughout the night, the audience, filling the second floor of the quaint shop house to the brim, was transfixed by one stunning photograph after another, frequent audible gasps being heard as the images flashed on the screen. The often-lively debate between members of the panel soon showed the contentious nature of judging art. The audience particularly enjoyed the friendly fire between judges Ryan Wong and Triston Yeo, whose witty exchanges at the judging table laid bare their diametrically opposing opinions.

The Asia Without Borders Photography Competition 2013 committee would like to thank our judges, sponsors and partners:

MAIN SPONSOR

**Canon**  
Delighting You Always



**1** Invited by Myanmar's TODAY Group of Companies, ASIAN Geographic Publisher John Thet presents the Grand Prize cash to the winner, U Kyaw Win Hlaing (2nd from right), who hails from Myanmar

**2****3****4****5****6****7****8**

Over  
6,500 photos  
— ACROSS —  
67 countries  
worldwide

As the crowd mingled during the intervals and passionately dissected the evening's proceedings, the topic would always return to Asia and her far-reaching marvels. One guest enthused to judge Steven Yee that "photo composition can never be divorced from a genuine appreciation of culture and history, which our continent has, at the artist's full disposal".

Asia Without Borders once again brought old friends together, helped form new relationships and gave everyone something to take home. A big thanks to everyone who joined us for this memorable evening and to all those who participated this year. ♦ AG

OFFICIAL VENUE SPONSOR



PRIZE SPONSORS



LUCKY DRAW SPONSOR



SUPPORTING SPONSOR



SUPPORTING PARTNERS



# The World's First Dedicated High-Speed Rail Line



[ASIA]

JAPAN

FASTEST TRAIN

Model: SCMaglev (MLX01)

Made in: Japan

Speed: 581 km/h

Type: Magnetic levitation (Maglev)

When: Constructing in 2014, running by 2027

In 1964, Japan became the first country to build and operate a dedicated high-speed rail line. Built by engineers from the Japanese National Railways, it inaugurated the Shinkansen, or "Bullet Train". The line moved large numbers of people quickly through the congested transport network between Tokyo and Shin-Osaka at up to 250 km/h. Today, the network reaches 2,664 km. The line irrevocably altered the nature of rail travel, and remains the most heavily used high-speed rail route today.

## TECHNOLOGY (HIGH-SPEED NETWORK)

- First Japanese train to use standard gauge tracks of 1,435mm (previously using narrow gauge tracks of 1,067mm)
- Electric system of 25 kV AC electricity at 60Hz
- Electric multiple unit style: Trains run on electricity without a separate engine
- Running on dedicated elevated guideways that avoid traffic crossings and include disaster-warning systems

## COST TO BUILD (HIGH-SPEED NETWORK)

**US\$89.3 billion**  
¥9.2 trillion

## NUMBER OF HIGH-SPEED TRAIN USERS\*

**350 million**  
passengers per year

## COUNTRY POPULATION\*

**127.6 million**

## CURRENT LENGTH OF TRADITIONAL RAILWAY

**17,733 km**

## NUMBER OF TRADITIONAL RAILWAY USERS

**22,320 million**  
passengers per year

Spain runs the biggest high-speed railway network in Europe, with 3,100km of tracks.

**CURRENT CONSTRUCTION**  
1,800 km (Renfe Operadora)

**HIGH-SPEED SERVICE**  
Alta Velocidad Española (AVE)

**SPEED**  
310km/h

DID  
YOU  
KNOW?

### THE LONGEST HIGH-SPEED RAILWAY LINES IN ASIA BELONG TO CHINA

China boasts the planet's largest high-speed rail network, with 10,463km of tracks, including the longest high-speed railway line in the world, 2,298km between Beijing to Guangzhou.

**CURRENT CONSTRUCTION**

13,053 km (China Railway Corporation)

**HIGH-SPEED SERVICE**

Shanghai Maglev Train

**SPEED**

431km/h (the world's fastest train in regular commercial service)

[EUROPE]

## FRANCE

### FASTEST TRAIN

Model: TGV V150  
Made in: France  
Speed: 574.8 km/h  
Type: Conventional wheel  
When: 2007



### COST TO BUILD (HIGH-SPEED NETWORK)

**US\$2 billion**

13.8 billion 1984 French francs

### NUMBER OF HIGH-SPEED TRAIN USERS\*

**100 million**

passengers per year

### COUNTRY POPULATION\*

**65.7 million**

### CURRENT LENGTH OF TRADITIONAL RAILWAY

**27,801 km**

### NUMBER OF TRADITIONAL RAILWAY USERS\*

**977 million**

passengers per year

### TECHNOLOGY (HIGH-SPEED NETWORK)

- Standard gauge tracks of 1,435mm
- Electric system of 25 kV AC electricity at 50Hz
- Originally designed to be powered by gas turbines; prototypes later evolved into electric trains after the petrol crisis of 1973
- Steep grades used instead of building viaducts and tunnels, which minimised construction cost

**Europe** started developing dedicated high-speed rail lines soon after Japan launched theirs. However, the Ligne à Grande Vitesse (LGV) Sud-Est line from Paris to Lyon only opened in 1981 with the Train à Grande Vitesse (TGV) trains. Since then, France has continued to build an extensive network, with lines extending in every direction from the capital. Today, France has the second largest high-speed network in Europe, with 2,037 km of high-speed rail lines, only behind Spain's 3,100 km.



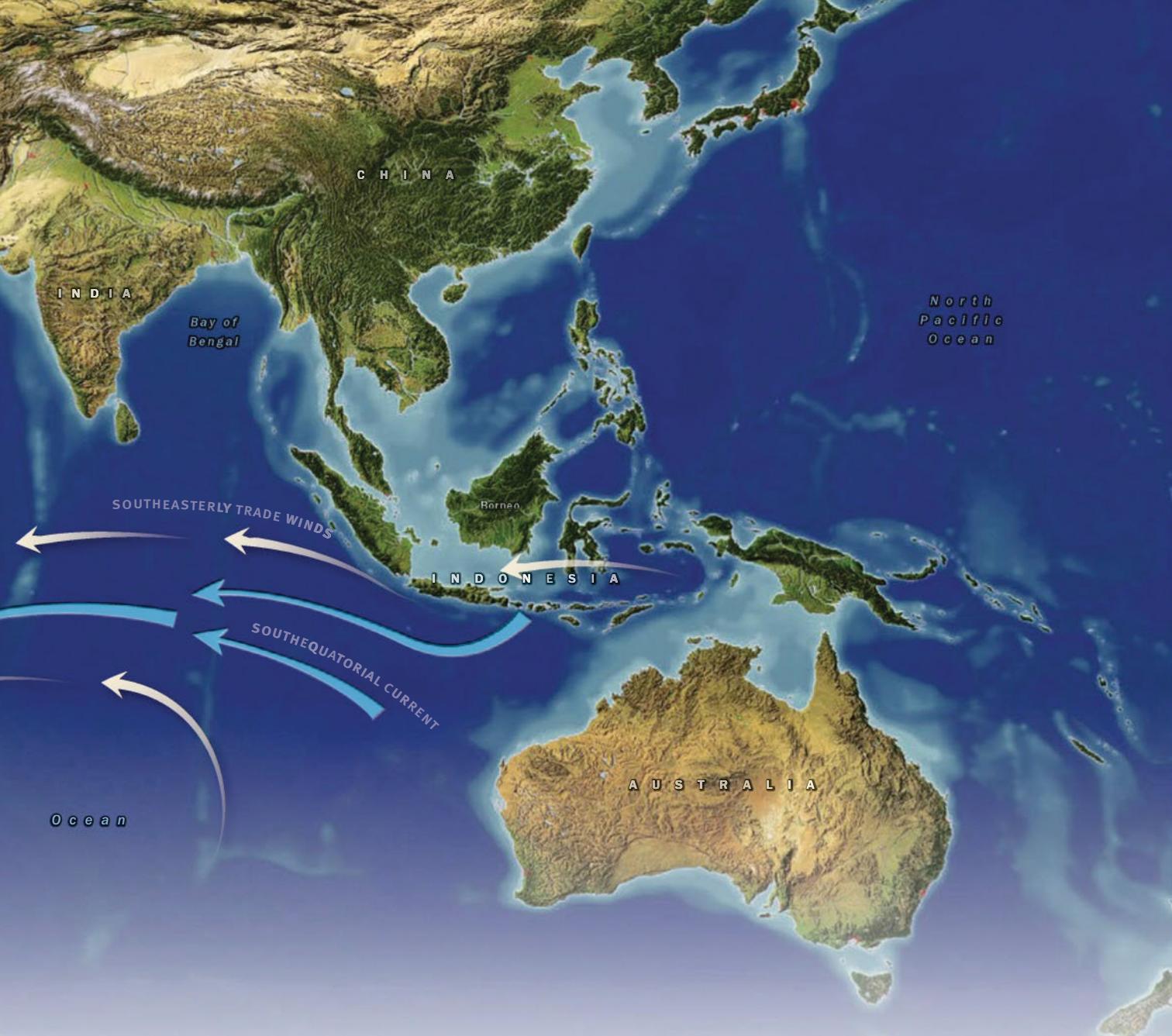
# Finding Madagascar

AN ASIAN LAND

**I**t is said that the settlement of Madagascar, one of the last landmasses to be reached by people, is also one of the most unusual and least understood episodes in human prehistory. The island and its people are not mentioned in any written source until the Arab geographer Muhammad al-Idrisi in 1154. Yet evidence from language, genetics and culture all surprisingly attests that this

island on the edge of the Indian Ocean, off the southeastern coast of Africa, was first settled by Indonesians.

Today's Malagasy people speak dialects of an Austronesian language that traces its origins back to Indonesia. Most of the Malagasy lexicon is ultimately sourced from Ma'anyan, a language spoken along the Barito river valley of southeast Borneo. Loanwords from Sanskrit, all with local linguistic



modifications via Javanese or Malay, hint that Madagascar may have been colonised by settlers from the Malay empire Srivijaya from the sixth to 13th centuries AD.

This thesis is reinforced by a 2012 study comparing genetic samples from Indonesian island peoples with those from several Malagasy ethnic groups. The work favours a scenario in which Madagascar was settled approximately

1,200 years ago by a very small group of women (around 30), most of Indonesian descent (approximately 93 percent) via a small, perhaps even unintended, transoceanic crossing.

Furthermore, a wealth of cultural evidence – including iron working techniques, outrigger boats, musical instruments such as the xylophone, and the cultivation of rice, bananas, yams and taro – all supports a strong

Southeast Asian connection from at least the eighth century onwards.

Madagascar may belong, in geographical terms, to the continent of Africa, but it is the peoples of Southeast Asia who can rightfully claim this distant tropical paradise as their own. ♦AG

Source  
“A small cohort of Island Southeast Asian women founded Madagascar”, M.P. Cox, M.G. Nelson, M.K. Tumonggor, F.-X. Ricaut and H. Sudoyo, *Proceedings of the Royal Society B* (2012)

{ ARCTIC }

# First People of *the Arctic*

••• *The Natives  
of Beringia*

◆◆◆ TEXT  
Bogdana Vashchenko





---

A hunter from the Russian Arctic tribe, the Nenets



**Thousands of years have shaped the lives of the original peoples of the Arctic, true explorers and survivors of one of the world's most desolate environments. To this day, the natives of the Arctic, including one of the oldest tribes, the Chukchi, continue to thrive.**

♦♦♦

**I**t is said that the raven created the mountains and rivers, tundra and fells, dogs and whales, seals, deer and birds... and the first people. This raven had taught the people to speak and eat the meat of animals. He showed them how to sew clothes and make fire. And it was him who lit the heavenly lights. He drove a stake into the sky, where the North Star now shines. Then he tied the other stars to the stake, so they go around it like reindeers on a leash.

The Chukchi, an ancient Arctic people that chiefly live on the peninsula of Chukotka, still believe in

---

**TOP** Ilullisat, Greenland: A panorama created from five shots taken at sunset

---

**BOTTOM RIGHT** The green mile: A beautiful night lit by the aurora borealis

this legend of the raven. They call themselves the Lygoravetlat, meaning "genuine people". Today, numbering a little over 15,000, they are masters of a territory that is mostly treeless tundra. The climate is harsh, with winter temperatures sometimes dropping as low as minus 54 degrees Celsius. The cool summers average around just 10 degrees Celsius.

These Arctic connoisseurs have inhabited and dominated the inhospitable Arctic lands – or more accurately, the peninsula of the Chukotka – for thousands of years. Their main totems are the bear,



a symbol of strength, and the raven, a symbol of wisdom and quick wit. Fearless and battle-prepared, the Chukchi, unlike other native people of Siberia, have also never been conquered by the Russians.

Humans first appeared in Chukotka about 30,000 years ago, when the region was joined with Alaska via an extensive isthmus called the Beringia. It is a widely accepted theory that through this land bridge, the first inhabitants travelled from Asia to America – the ancestors of the Indians.

The separation of Asia and America about 12,000 years ago, as a result of a substantial warming, created two distinct cultural traditions, unusual among the northern people. The basis of one was nomadic reindeer hunting, and at the heart of the other was the hunting of marine mammals. The creators of these traditions moved further into the depths of the Arctic – along the coasts of the Arctic Ocean, the Chukchi Sea and the Bering Sea – mastering the art of survival in one of the most severe climates on the planet.

This called for the people of Chukotka to adapt the old ways to life in the Arctic. Chukchi cuisine is based

on boiled walrus, seal, seaweed, and whale meat, along with its life-sustaining fat. The staple foods eaten by the Chukchi also include the products of reindeer farming: boiled venison, reindeer brain, bone marrow,



# THE ARCTIC

The Arctic covers 40 million square kilometres or approximately eight percent of the Earth's surface. However, it is host to a relatively tiny population of only four million. Various small groups of indigenous peoples have occupied the area for millennia. The settlement area is currently divided between eight countries: Canada, Denmark, Finland, Iceland, Norway, Russia, Sweden and the USA.

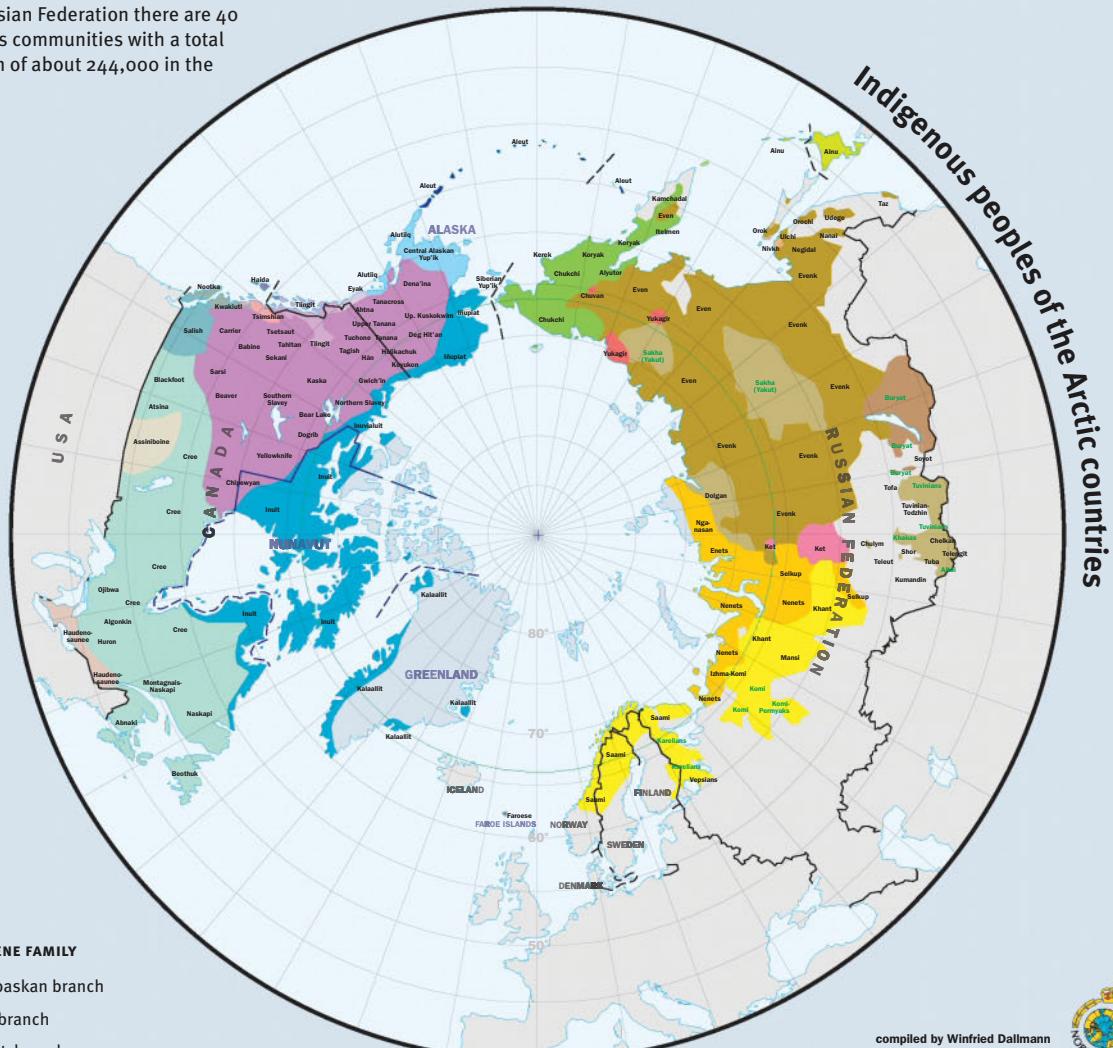
## INDIGENOUS PEOPLE IN THE RUSSIAN ARCTIC

In the Russian Federation there are 40 indigenous communities with a total population of about 244,000 in the

North, Siberia and the Far East. These include the Aleutians, Dolgan, Koryak, Mansi, Nanai, Nenets, Saami, Selkup, Khanty, Chukchi, Evenks and Inuits. A population of more than 400,000 of Komi and Yakuts also inhabit the North. These different indigenous groups have inhabited the area for thousands of years, each having their own history, culture and beliefs. Today, the effects of globalisation are creating many changes that are affecting their traditional way of life.

## GENETIC SIMILARITIES

In human genetics, the study of haplogroups is used to define genetic populations and ascertain the origins of our ancestral history. The earliest haplogroups are found in Africa, where humans first emerged, and as people migrated further and crossed Asia and Europe, unique genetic mutations gave rise to the different ethnicities we know today. The indigenous people of the Arctic have been found to possess haplogroups A2, B2, X2a and M3, which have an Asian origin.



compiled by Winfried Dallmann  
© Norwegian Polar Institute



For the USA, only peoples in the State of Alaska are shown. For the Russian Federation, only peoples of the North, Siberia and Far East are shown.

Majority populations of independent states are not shown, not even when they form minorities in adjacent countries (e.g., Finns in Norway).

Areas show colours according to the original languages of the respective indigenous peoples, even if they do not speak these languages today.

Overlapping populations are not shown. The map does not claim to show exact boundaries between the individual groups.

In the Russian Federation, indigenous peoples have a special status only when numbering less than 50,000. Names of larger indigenous peoples are written in green.

### NA'DENE FAMILY

- Athabaskan branch
- Eyak branch
- Tlingit branch
- Haida branch

### PENUTAN FAMILY

- Macro-Algonkian branch
- Wakashan branch
- Salish branch

### MACRO-SIOUX FAMILY

- Sioux branch
- Iroquois branch

### INDO-EUROPEAN FAMILY

#### Germanic branch

- Eskimo-Aleut family
  - Inuit group of Eskimo branch
  - Yupik group of Eskimo branch
  - Aleut branch

#### URALIC-YUKAGIRAN FAMILY

- Finnic-Ugric branch
- Samodic branch
- Yukagiran branch

### ALTAIC FAMILY

- Turkic branch
- Mongolic branch
- Tunguso-Manchurian branch

### CHUKOTKO-KAMCHATKAN FAMILY

- Ket (isolated language)
- Nivkh (isolated language)
- Ainu (isolated language)

and reindeer blood for soup. A traditional soup is made from semi-digested moss from a slaughtered reindeer's stomach mixed with blood, fat and pieces of boiled meat. The Chukchi also eat frozen meat and edible leaves and roots.

For several hundreds of years, the cone-shaped, tent-like *yaranga*, built with a rectangular or poliangular base, has been the traditional home of the Chukchi. It takes five to 15 reindeer skins to build a small *yaranga*, and up to 80 for a large one. Heat from the *zhirkik* (fat-burning lamps) and from the bodies of its inhabitants can keep a *yaranga* warm enough to dwell within without the need to wear clothes.

During long polar nights, when the wind was strong and the frost severe, the Chukchi would not hunt. The time was used for carving, to make tools for everyday life, as well as amulets. In the dimly lit *yaranga*, the ancient Chukchi felt his art through touch more than with his eyes; that is why Chukchi

figurines are very pleasant to hold in the hand. Ancient thematic engravings and carvings were monochromic; engravers used soot from the *zhirkik* as a colouring agent. Sculpturing and carving on bone and walrus tusk became the most highly developed forms of folk art among the Chukchi. Common traditional themes are landscapes and scenes from day-to-day life: hunting parties, reindeer herding and animals native to the region.

The extremely important role that art played in the life of the peoples of ancient Chukotka is said to be one of the main factors that contributed to their

♦ ♦ ♦

**During long polar nights,  
when the wind was strong and  
the frost severe, the Chukchi  
would not hunt.**



ABOVE Russia, Yamalo-Nenets Autonomous Okrug: The hard life of the Nenets

development as a society. Cultural contact was another key factor that explained the blossoming of their artistic sophistication at the turn of the era. Living on the outer boundaries of human civilisation, northerners were not completely isolated from the rest of the world.

The mysterious faces, multi-figure zoomorphic compositions, and elegant curvilinear ornamentation

typical of Chukotka's ancient art enable one to identify in this art some features that have their roots in the civilisation of ancient China, in the cultures of the American Indians, and in the art of Southern Siberia, the Amur region, Sakhalin and Hokkaido. Some works created thousands of kilometres away from the polar circle, through multiple exchanges with travellers, found its way to the inhabitants of the northern latitudes, and ivory carvers there learned such evolved skills developed by artists in Eastern Asia and North America.

In traditional Chukchi society, only men engaged in these arts, because it was considered an act of magic. Art is thus linked to the Chukchi's equally impressive spiritual belief system, which is rich and diverse. It is reflected in shamanistic rituals, myths and legends, festivities and dances. Evidence of these spiritual themes can be found in ivory art.

The sculptured images created by Arctic sea hunters between 100 BC and 1000 AD were probably associated with specific rituals that were accompanied by singing, dancing and dramatised performances. The forms of the ritualistic items and the character of these images with which they were decorated were shaped not only by the religious beliefs of the ancient Chukotka hunters, but also by their ideas of what they considered beautiful. This cast of ancient characters carved in bone include seals, walruses, foxes and dogs, and especially the *peleken*. To this day, the latter's origins and meaning are not fully understood. But this man-like figurine has become a kind of talisman for the Chukchi.

Animals, plants, heavenly bodies, rivers, forests and other natural phenomena are all considered to have their own spirits, which



## ARRIVALS OF THE FIRST PEOPLES

### 30TH CENTURY BC

**DORSETS** Lat. 64° | Long. 77°

The first artefacts that proved the existence of the Dorsets were found at Cape Dorset, Nunavut, Canada. The Dorsets arrived at the Arctic from Siberia just after 3000 BC. They crossed the land bridge between Russia and Alaska on foot.

### 5TH CENTURY BC

**CHUKCHIS** Lat. 67° | Long. 166°

The Chukchis moved to the Chukotka district in the extreme northeast of Siberia from the area around the Okhotsk Sea. Chukotka is bordered by the Chukchi Sea and Bering Sea regions of the Arctic Ocean.



**BELOW** Nenets children share a laugh



ALEKSANDR ROMANOV

► **Areas of residence** Chukotskiy Avtonomnyy Okrug and areas adjacent to it.

► **Language** Chukchi

► **Traditional culture** Seventy percent of Chukchis are nomadic reindeer breeders; the remainder is sedentary and engages in sea mammal hunting.

► **Current issues** Today's oil and gas development is threatening to reduce the sea mammal population. Reindeer pastures are also on the path to destruction due to gold mining, industrial development and radioactive pollution. Nuclear waste from the Bilibino power station is also threatening the local environment here.



1 AD

**EVENKS** Lat. 66° | Long. 108°

The Evenks originally inhabited the area around Lake Baikal, in southern Siberia. At the start of the first millennium, the Evenks migrated to the tundra in the north and the steppes in the south due to the pressure from the Turkic tribes in the Baikal area. The Paleo-Asiatic tribes that the Evenks came across were either taken to become part of the Evenks or forced to retreat. The Evenks in the southern areas were called "Horse Tungus" and were influenced by the Mongols. Two large groups eventually emerged – the Northern Evenks and the Southern Evenks. Occupying the

mountainous areas of the taiga, the Evenks are the only northern people to do so.

From the 17th century onwards, the Evenks abandoned some of their previous territories. One such instance was when the Yakut, Buryat and Russians came into their territory at the River Angara. The Evenks shifted again in the 19th century mainly due to the pressure of their southern neighbours. Other contributing factors include the arrival of Russians and the search for better hunting grounds, as well as a way to escape disease outbreaks. The Evenks first moved to the lower stretches of the Amur and Sakhalin and then to the Chukchi Peninsula. Some of the Evenks also moved to the west of Yenisey,

while the "Horse Tungus", the Manegir and the Birar moved to Manchuria.

The Evenks eventually began to lose their cultural identity and social structure. Today, some are attempting to return to their nomadic lifestyle. Reindeers are still used for transportation even though modern transportation has been introduced.

● **Areas of residence** From Lower Yenisey valley through Evenkiyskiy Avtonomnyy Okrug, Irkutskaya and Amurskaya Oblast to Khabarovskiy Kray, Buryatiya, North, West and South of Yakutia. They are also present in Northeast China and a small group in Mongolia.

◆ ◆ ◆

**The contacts between the people of Chukotka and their neighbours were so close that it led to holistic exchanges of art, traditions and ways of life...**

the Chukchi believed sometimes transformed into human beings. During rituals, the Chukchi shamans fall into trance – with the aid of hallucinogenic mushrooms, which they believed had a spirit as well – communicating with spirits, allowing spirits to speak through them, predicting the future, and casting spells of various kinds.

The contacts between the people of Chukotka and their neighbours were so close that it led to holistic exchanges of art, traditions and ways of life – like the humble dog sled, passed to indigenous peoples of America from those in Arctic Asia. Thus, ancient Chukotka was part of a single cultural process that was developing in the Pacific region, a bridge of sorts that linked Eurasia with America, long before the Europeans discovered the New World. ♦ AG

---

◆ ◆ ◆

**BOGDANA VASHCHENKO** has a Master of Science in Physics and is a journalist, cave diver and technical diver. She now works for *National Geographic* (Russia) and is the Projects Director for PHOTOTEAM.PRO. She has co-authored a book on the world's biggest underwater gypsum cave system and has led various other awareness projects.



It was to be a journey that would relive the great exploits of ancient explorers. Longyearbyen, 78°13'N 15°33'E. The cold, grey town, sparse and sprawling, serves as a base from where most voyages begin to the high Arctic. The capital of Svalbard, it is the world's northernmost town, all settlements further north being research or meteorological outposts.

PHOTOS ON SPREAD, FROM LEFT: MICHELLE VALBERG, SEPP FRIEDHUBER, MAEL RESSOS

One of the best ways to trace the voyages of modern explorers – themselves on expeditions to survive the harshest environments discovered by Asian tribes thousands of years ago – is to put your adventure in the hands of folks like Swiss explorer Christian Genillard, expedition leader aboard the *Polar Pioneer*, a Polish-built expedition cruise ship operated by an Australian cruise company called Aurora Expeditions ([www.auroraeexpeditions.com.au](http://www.auroraeexpeditions.com.au)).

➲ **Traditional culture** Breeding reindeers, hunting wild reindeers, trapping fur animals such as fox and squirrel, fishing, horse breeding (only in southern parts of Siberia and the Russian Far East).

➲ **Language** Even; dialects include Khakayuschi (northern) and Sekayschi (southern).

➲ **Current issues** The rivers and the grasslands that the Evenks occupy are polluted with heavy metals and sulphur dioxide from industries in the Norilsk area. The deforestation in Evenkiyskiy Avtonomny Okrug is also threatening their livelihoods.

#### 7TH–9TH CENTURIES AD EVENS

Lat. 68° | Long. 130°

The origin of the Evenks, like the Evenki, is connected with the Tungus tribes, which probably originated from the Lake Baikal area. According to historical data, the community of Tungus, including the Evenks, had their own state, Bokhai, from the 7th to the 9th centuries AD.

The Tungus tribes were forced to move north after attacks by other tribes and by the 11th and 12th centuries the Evenks had settled in the Kolyma river basin. By the time of their first contact with Russians in the mid-17th century, some Evenks had

migrated as far as the Sea of Okhotsk. During the 18th and early 19th centuries, the Evenks had moved to the northern part of the Okhotsk coast and to Kamchatka. Their contact with the Yakuts was so profound that a number of the Evenks adopted the Yakut language and culture.

➲ **Areas of residence** North Khabarovskiy Kray, Magadan Oblast, Kamchatka, Koryakskiy and West Chukotskiy Avtonomny Okrugs, and North and East Yakutia.

➲ **Traditional culture** The Evenks were a semi-nomadic community of mainly reindeer and sea mammal hunters. Since the 1930s, the Evenks have been increasingly sedentary, engaging in cattle-breeding and agriculture.

Did You Know?



**Climate scientists**  
study icebergs as they break up for clues to the processes that cause ice shelf collapse.

The *Polar Pioneer* was built in Finland in 1982 as the *Akademik Schuleykin* (Академик Шулейкин), an ice-strengthened research ship that plied the waters of the USSR's northern coast for many years. In 2000, she was refurbished in St. Petersburg, Russia to provide accommodation for up to 54 adventurous passengers seeking to travel to remote destinations few could even dream about. While it's no luxury vessel, the accommodations are comfortable and the meals wholesome and uncomplicated. Russian Captain Yury and crew are among the most experienced navigators in the world and their enthusiasm is legendary.

As Christian pores over a giant map on the bridge, he eventually decides to go north, up the west coast of Svalbard for 133 nautical miles. Kongsbreen and Fjortende Jullibreen offer the majestic backdrop, made even more dramatic by thunder-like booms during glacial carvings. As the chunks of magnificent

ice plummet into the cold blue and churn krill, flocks of kittiwakes (*Rhynchoscyclus brevirostris*) wing back and forth overhead swooping down to grab a bite, while colonies of glaucous gulls (*Larus hyperboreus*) look on for weightier opportunities.

The journey on-board the *Polar Pioneer* is riveting: on the bridge with the captain and expedition leader, watching them chart out the next best course; lulled to sleep in the cabin at nights during the long, undulating journey on the Arctic Ocean; awakened by tremors and jolts as the ship breaks through ice floes; running out in the middle of the night, startled by the bright light of day to spot life on the floes; searching for new thrills in a fog-cloaked sea in temperatures barely above freezing.

The quest eventually finds us at 81°24'N 12°45'E, just 500 nautical miles from the North Pole, and we have the opportunity to

explore the uncharted terrain of Rijpfjord on the north coast of Nordaustlandet (literally "North East Land"), the second-largest island in the Svalbard archipelago. It's an awe-inspiring experience that adds a sort of eminence to those with an explorer's heart.

Christian speaks admiringly of Roald Engelbregt Gravning Amundsen (1872–1928), a Norwegian explorer of the polar regions.

**FAR LEFT** A herd of walruses stampedes into the Arctic ocean

**BELOW LEFT** A lone polar bear against the golden light of the Arctic

**BELOW RIGHT** The *Polar Pioneer*: A vessel made for those adventurers at heart



- **Language** Different dialects of their own language, Even, as well as Yakut.
- **Current issues** Coastal and river shipping as well as infrastructure construction have adversely affected reindeer pastures and rivers in North Yakutiya. Gold mining and radioactive waste from atomic testing have polluted the Shamanikha and Omolon rivers.

#### 10TH CENTURY AD NENETS Lat. 68° | Long. 62°

The Nenets moved from farther south in Siberia to the northernmost part of Russia, and they now form the largest indigenous group of the Russian North. They mostly live in small villages and nomad camps in the tundra and taiga. Over the past 300 years, the Yamal Peninsula has seen a five-fold increase in the Nenets population, in part as a result of the hydrocarbon discoveries of the 1960s. Traditionally, the Nenets dedicated themselves to reindeer breeding, hunting, fishing, gathering and trapping. Today, although the Nenets are mostly semi-

nomadic, some families still continue the traditions of past generations.

The tundra- and forest-dwelling Nenets have different economical cycles of reindeer breeding and migration patterns. The tundra Nenets, who are semi-nomadic, undertake seasonal migrations, with large reindeer herds from the northern forest areas in winter, to the birthing sites for the reindeers halfway across the tundra in May, eventually arriving at the coastal areas during the summer. The forest Nenets follow shorter migration routes of 200 to 300 kilometres, with small herds of reindeer. They focus on fishing as an important commercial business, supplying to local fish factories.

Amundsen led the historic Antarctic expedition to discover the South Pole in December 1911. In 1926, he became the first Caucasian expedition leader to be recognised, without dispute, as having reached the North Pole. He is also known for being the first Caucasian to traverse the Northwest Passage (1903–1906).

And so, walking in the footsteps of greatness, we enjoy the splendour of Bengtsenbukta, the westernmost branch of Rijpfjorden. The thrill of being in this wild, uncontrolled estate offers the humbling opportunity to marvel at majestic icebergs and captivating ice floes – and then come face-to-face with the equally arresting untamed creatures who have conquered this harshest of regions.

**BELOW** Kiilopää, Lapland:  
At -36°C, this was a difficult  
photo to attain

**ABOVE** Kittiwakes on ice:  
Their calls were muffled  
by the mist

**ABOVE RIGHT** A sled dog team  
from Chukotka in Tkachen



The Nenets community has also now mingled with the Komi and Russians and started new trades such as fur, stock and vegetable farming in the upper Pechora areas.

⦿ **Areas of residence** Arctic coast, Kanin Peninsula, Taymyr Peninsula, southward to northern Taiga Belt.

⦿ **Traditional cultures** Breeding reindeers and using them as means of transport and food. Today, the majority of Nenets are settled or only semi-nomadic.

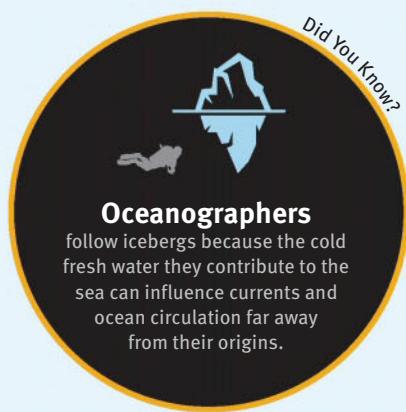
⦿ **Language** Tundra and forest dialects of Nenets.

⦿ **Current issues** The Nenets livelihoods have been affected by the oil and gas development that has destroyed reindeer

pastures. The Yamal Peninsula has already been ruined, while the Timan-Pechora region is on its way to destruction. Reindeer migration routes have also been cut off by roads and pipelines. Enduring the challenges of colonial intrusion, civil war, forced collectivisation and industrial pollution, the Nenets have seen their traditional way of life continually threatened.



Indeed, who can argue the imposing magnificence of a sunbathing walrus or the hair-raising grandeur of a wandering polar bear – when nothing separates you but the thin, chilly air of the Arctic? In this enchanted, intimidating land, we wide-eyed city folks quickly realise that we're way down the food chain...



#### 17TH CENTURY AD

**DOLGANS** Lat. 72° | Long. 110°

By the 17th century, the Arctic region was mainly occupied by Samoyedic tribes consisting of the Nenets, Nganasans, Enets and Selkups. It was at this time that the Dolgan tribe emerged, migrating from the banks of the Lena and Olenyok rivers.

The Dolgans live in the tundra of the Taymyr Peninsula, along and south of the rivers Kheta and Khatanga within the Taymyrskiy Avtonomyy Okrug. Their hunting areas stretch into the Putorana and Anabarskoye plateaus to the south of the rivers. A small Dolgan population of a few

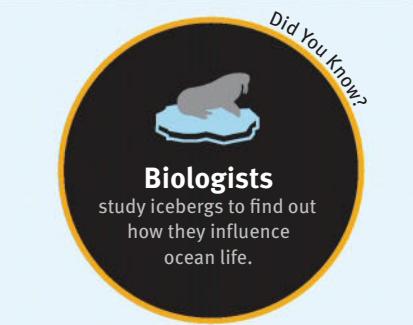


Cruising via zodiac is exhilarating, but it is really just a warm up to the spine-tingling moment when we make a landing. Nothing is more satisfying than finally setting foot on land where the first Asian natives plodded centuries ago and where the great explorers of the modern world made their names. Crossing the Arctic tundra on foot is not only a once-in-a-lifetime experience (or thrice-in-a-lifetime?), but also a challenge worth its weight in glacial gold. Trekking across Nordaustlandet allows one to observe the true austerity of the land.

The abrasive terrain of sporadic loose gravel, jagged tiling and packed ice make for an exciting, taxing journey at every landing. Trapper camps, historical remains of whaling stations, and the odd wild blossom break the monotony; a single saxifrage flower (*Saxifraga oppositifolia*) reminds one of life's beauty amid its severity.

Christian and Captain Yury make a final push to Kvitøya. This easternmost part of the Svalbard archipelago is so far-flung that the closest Russian Arctic possession, Victoria Island, lies only just over 60 kilometres further to the east. We stop by the tiny island of Karl XII to see the grand walruses who love sunning themselves in this out-of-the-way haven. Arctic terns (*Sterna paradisaea*) and eider ducks (*Somateria mollissima*) are our common companions along the way.

The *Polar Pioneer* eventually sails to the southwestern part of Nordaustlandet, towards Wahlenberg fjord, and then to Palanderbukta, which feel like the nooks and crannies of the Arctic. Days go by and we pass through Hinlopenstretet, the strait between Nordaustlandet and Spitsbergen, on the way to the breathtaking cliffs of Alkefjellet. This is "Bird Mountain", home to some 90,000 Brünnich's guillemots (*Uria lomvia*), which we observe busily putting



**Biologists**  
study icebergs to find out  
how they influence  
ocean life.

around their nests. In between, we play a game of spot the Arctic fox (*Vulpes lagopus*), the guillemots' cunning nemesis.

Back in Longyearbyen, the exhilarating experiences during our nine-day journey begin to sink in: walking on an ice floe, breaking off pieces of bergy bits and growlers and eating them, and of course, standing on the gangway of the *Polar Pioneer* and watching the most desolate, yet most beautiful of Nature's gifts glide by. ♦ AG

PHOTOS ON SPREAD, FROM LEFT: CHRISTIAN SCHWEIGER, BENOIST CLOUET, AFANASIY MAKOVNEV

hundred individuals lives in Dudinka, the Okrug capital. The Dolgans are a culturally distinct group with a comparatively large intelligentsia, many of whom came to undertake various prestigious occupations, such as medical doctors and teachers.

The Dolgans were traditionally nomadic hunters and reindeer breeders until they had to adopt a sedentary way of life under collectivisation policies of the Russian and Soviet administrations. Dolgan migrations are short and have not changed after the introduction of collective reindeer farms.

The Dolgans picked up reindeer breeding from neighbouring indigenous communities.

However, they took the unusual step of using herd dogs, which is not common among Turkic reindeer breeders. The winter pastures are located in the tundra areas, while the summer pastures are situated in the forest tundra of the main river basins. They also rely on fishing, which is undertaken commercially.

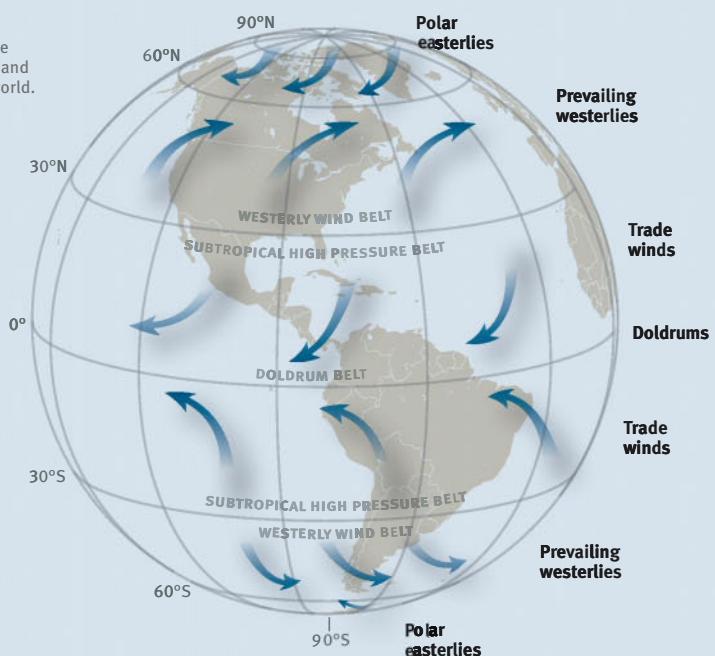
- **Areas of residence** Taymyrskiy Avtonomnyy Okrug and Northwestern Yakutia.
- **Traditional cultures** Nomadic lifestyle, mainly supported by hunting. Today's Dolgans are settled or semi-nomadic.
- **Language** Dolgan, Russian
- **Current issues** Sulphur dioxide and heavy metals have polluted the pastures and



rivers in the Norilsk area. Russian mining and smelting industry – especially that of one MMC Norilsk Nickel – has released into the environment almost 500 tonnes each of copper and nickel oxides and two million tonnes of sulphur dioxide, making Norilsk one of the most polluted places in the world today.

## Considering Coriolis

Idealised relation of the polar front to the wind and pressure belts of the world.



ON THE SHELF



## Arctic The Best Photographs

This 168-page hardcover coffee-table book contains a beautiful collection of winning images from one of the world's biggest photography competitions solely focused on the landscape, wildlife and people of the Arctic – Global Arctic Awards.

*Arctic: The Best Photographs* features 80 professional photographers who have dedicated their time to capturing the beauty of our planet's northernmost region.

The book is a must-have for anyone interested in great photography and is sure to inspire adventurous readers to consider heading true north.

[www.globalarcticawards.com/photobooks](http://www.globalarcticawards.com/photobooks)

This book was printed in Latvia by printing house Jelgavas tipogrāfija.

Text Richard Smith

Surface ocean currents account for some of the planet's most important water flows, and are driven largely by a complex global wind system. If the Earth didn't rotate and remained stationary, wind systems would be much simpler, with a straightforward circulation of the atmosphere between the low-pressure equator and high-pressure pole of each hemisphere in a continual loop.

The rotation of Earth causes circulating air to be deflected. Rather than simply flowing straight back and forth from the equator to the Polar Regions, the planet's rotation results in a deflection of airflows to the right in the Northern Hemisphere and to the left in the Southern Hemisphere. In the 19th century, French mathematician Gaspard-Gustave de Coriolis discovered and eponymously named this deflection the Coriolis Effect.

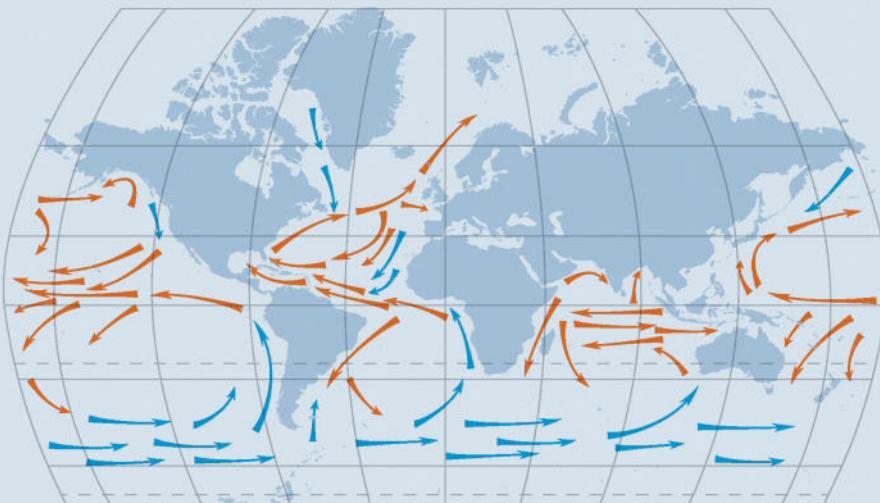
### WINDS AND CURRENTS

Given that winds have the ability to drive surface ocean currents, their deflected course, as a result of the Coriolis Effect, has a corresponding influence on ocean flow. With

## Cause for currents

As winds pass over the ocean, they drag the water surface along with them in their direction of movement, creating major wind-driven currents.

→ Warm current  
→ Cold current



## Myth Buster

An oft-cited demonstration of the Coriolis Effect is the example of water draining down a plughole in an anti-clockwise direction in the northern hemisphere and clockwise in the south. Whilst this is theoretically true, it isn't in every case. Factors such as random currents in the water, the shape of the sink and the way it was filled tend to drown out Coriolis at this small scale.

the exception of equatorial regions, where there is no deflection of winds, the Coriolis Effect is a global phenomenon with maximum deflection taking place at the poles.

As winds pass over the ocean, they drag the water surface along with them in their direction of movement, creating major wind-driven currents. These currents act at whole ocean basin scales and have major influences on biological processes, both above and below the waves. As Coriolis deflects winds to the right in the Northern Hemisphere, ocean scale currents, known as gyres, also follow this trend and flow in a clockwise spiral. In the Southern Hemisphere, they flow in an anticlockwise direction.

### CORIOLIS AT THE POLES

Wind strength tends to be relatively light in the Arctic, although hurricane strength gales can occur and may last several days. Arctic cyclones spin in an anticlockwise direction, as a result of Coriolis, and can occur at any time of year, with the Russian Arctic tending to experience stronger winds than its Canadian counterpart. Coriolis even influences the movement of sea ice at an arctic-wide scale, due to the amplified force of Coriolis in the polar regions. The close proximity of other landmasses, however, prevents Arctic winds from generating major oceanic currents.

The Antarctic, on the other hand, boasts the Antarctic Circumpolar Current (ACC), which transports a greater volume of water than any other of the world's currents. It is the most important circulation feature of the Southern Ocean, as well as being the only current that flows completely around the globe. The ACC's easterly flow is driven by the world's mightiest westerly winds and, due to the distribution of landmasses across the globe, is a unique global link connecting all the major oceans and influencing our climate.

### THE INFLUENCE OF CURRENTS

The Coriolis Effect has a major influence on biological processes through its role in upwelling, the transport of cool and nutrient-rich water from the deep into the shallows. In areas of upwelling, the huge influx of such nutrient-rich water stimulates the growth of primary producers, such as algae and phytoplankton, which, in turn, nourish the whole food web.

The mechanism by which upwelling occurs is through long shore winds, such as those that circulate the Antarctic landmass. As the winds travel parallel to the coastline, currents are deflected to the right in the Northern and to the left in the Southern Hemisphere due to Coriolis. The subsequent movement of water at right angles to the direction of the wind is a result of so-called Ekman Transport. When

surface waters are dragged by wind, they drag, in turn, lower layers of water with them, but to a lesser extent. Each layer is dragged by friction from the shallower layer but moves more slowly than the one above it, resulting in a net movement at right angles to the direction of the wind.

The Coriolis Effect has major influences on both the physical and biological processes of our planet. It helps to fuel some of the most productive ocean systems and has wide-ranging effects on the globe's climate from pole to pole. The full complexity of Coriolis and its global reach are yet to be fully appreciated, but its important influence on our planet is unquestionable. ♦AG

---

**RICHARD SMITH** is a marine biologist, expedition leader and photojournalist, who aims to inspire a passion for the ocean and raise awareness about marine conservation issues through his images. His PhD was the first research on the biology and conservation of pygmy seahorses. Richard has been diving since 1996, travelling the world, and photographing and studying the ocean realm.

[www.oceanrealmimages.com](http://www.oceanrealmimages.com)

# From Asia to the Americas

A BIOGEOGRAPHICAL DYNAMIC

Text YD Bar-Ness

**O**ur grand expedition from the northeastern regions of Asia into the American continents is recognised as a pivotal migration in human prehistory. These may have been the first people to place their footprints on these two landmasses, but they were by no means the first living things to cross from Asia to America.

For millions of years, there have been intermittent interchanges of plants and animals between the continents. Biogeography, the biological science that deals with the distribution of flora and fauna, is a complex field that draws evidence from several sources, and we can now begin to isolate some of the Asian influence on the ecology of the Americas.

The most obvious candidates for organisms with Asian origins are those that are currently living there, and a few of these – most notably agricultural crops, domesticated animals and feral weeds – have been brought in geologically recent times to the Americas with human assistance. There's a symmetrical story, of course, of American-evolved species, such as camels, coming into Asia from the other direction.

But the story begins much earlier than these recent developments. We'll pick up the narrative on the

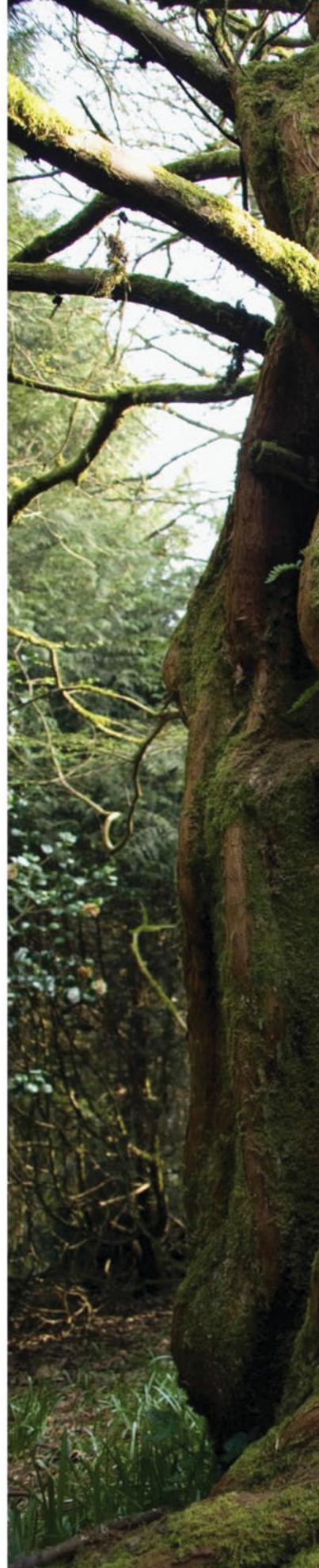
supercontinent of Pangaea 200 million years ago, and move forwards from there.

## The continents today

Three hundred million years ago, the continents were united in the single giant continental area of Pangaea, and there was one vast ocean called Panthalassa. It was not the first unified landmass, but it was the last. After one hundred million years, by the end of the Triassic period, Pangaea had broken up into Gondwana (to the south) and Laurasia (to the north).

South America left the other southern continents, as Gondwana broke up 180 million years ago. The link between South and North America at Panama was made approximately 10 million years ago; at this time, a great exchange of species began to occur between the two. At this tropical crossroads, species such as opossums, camels while porcupines moved north and bears, cats and dogs moved south.

North America was contiguous to the northwestern portion of Asia (Europe) until 60 million years ago, when the Atlantic Ocean began forming. Even as the continents moved apart, ice-covered regions and periods of low sea levels continued





**LEFT** The unusual twisted, knotty trunk of a legend of biogeography, the dawn redwood (*Metasequoia glyptostroboides*)

the biogeographical link. As the Pacific Ocean shrunk, the continents of Asia and North America came into contact – although this time on the far side of the previous connection. They are of such vast size that as they are rifting across the Atlantic, they are simultaneously merging at the Pacific side.

The North American tectonic plate may actually encompass a substantial portion of Siberia, and the actual meeting zone between these two plates could be well inland. This geological boundary is one of the least-studied on Earth, and one of the final puzzles of plate tectonics. Understanding its history is complicated by the nearby northern edge of the Pacific tectonic plate. Trapped between these three are the much smaller Bering and Okhotsk plates. This boundary is so indistinct that the North American (Laurentian) and the Eurasian plates are sometimes referred to in singular as the Laurasian plate.

At present, there is a major obstacle to terrestrial species between the two landmasses – the saltwater at the Bering Strait. But the distance between Siberia and Alaska is only 85 kilometres at the narrowest point, and for most of the last 60 million

years, lower sea levels have created a dry “land bridge” across the region. The Beringia Theory (also known as the Bering Strait Theory or Land Bridge Theory), first proposed by José de Acosta in 1590 and now widely accepted, maintains that this bridge offered a terrestrial path for humans, plants, animals, and other organisms between the landmasses.

It's worth sparing a thought for the marine connections that were closed when the land bridge formed: the pathway for a migrating whale is a barrier for the migrating bison. In fact, it is High Arctic marine mollusc fossils found far south in Alaska, dated to five million years, that provide the first record of a marine

Bering Strait serving as a marine migration path.

So, Beringia was a region of dry land since around the same time that the Atlantic began forming on the other side of the planet. What we call a “land bridge” was actually a vast landscape that was returning to its normal state. The Beringia region has only been dry for a portion of the last 100,000 years. During dry intervals about 50,000 and 19,000 years ago, ancestors of the Native Americans traversed this link from Asia into the Americas.

### A shared Pangaean heritage

There is a biological heritage of the Asian and American continents: lineages of organisms that appear to



**During dry intervals about 50,000 and 19,000 years ago, ancestors of the Native Americans traversed this link from Asia into the Americas.**



have been present in Pangaea and were subsequently separated by the splitting of the continents. Over time, they developed into separate species.

This “shared heritage” concept is especially well developed in the botanical reconstruction of a now-vanished forest, the Arcto-Tertiary Geoflora. This hypothesised forest spanning the Northern Hemisphere accounts for the close relationships among the flora of China, Europe and the Eastern United States, including maples, sycamores, oaks, birches, walnuts and pines.

One particularly notable plant found in the fossils of both Asian and American regions is the dawn redwood, *Metasequoia glyptostroboides*. This tree genus



is known from fossils throughout the Northern Hemisphere, but only survived to modern times in a single province of China. Like many other once-widespread organisms, it now exists in a fraction of its former range.

### Beringian travellers

Let's turn the globe around to the other side of the planet, and look at the much more recent links across the North Pacific. It's important to remember that for at least 50 million years until relatively recently, northeast Asia and northwestern America were linked by dry land and covered by vast forests. The water is a much more recent development.

The most recent land connections at Bering have allowed species to

travel more easily into the Americas from Asia. Even when the water formed an obstacle, plants could travel by wind and flotation, and animals could swim, fly or ride the ice floe between the two regions. The prevailing winds move from west to east, aiding Asian species in coming to the Americas.

There is Alaskan fossil evidence, approximately 50 million years old, of Asian-affiliated palms, laurels and nutmegs. There are a number of plants from the Asian steppes that are now found in eastern Beringia, including species of the sagebrush genus *Artemisia* and the sedge genus *Carex*.

Woolly mammoths, American lions, bison, musk ox and lemmings also traversed (and inhabited) Beringia in recent geological times. The now-

**TOP** The pendulous sedge (*Carex pendula*), a plant from the Asian steppe that is now found in eastern Beringia

**CENTRE** Provideniya, Russia: Ice clogs the passage to Provideniya Bay right through to late June. Provideniya is the closest official port to the Bering Strait in Russia's Far East

**FAR LEFT** Reed canary grass (*Phalaris arundinacea*), an invasive species with Asian origins that is commonly found in the West

**The now-extinct mammoths and lions were, like humans, descended from African ancestors that traversed Asia. Dogs came to North America from Asia as companions to humans.**

extinct mammoths and lions were, like humans, descended from African ancestors that traversed Asia. Dogs came to North America from Asia as companions to humans.

### **The Columbian exchange**

Over the last five centuries, the European conquest of the Americas via the Atlantic has brought over many plants and animals to the New World. Some of these have been of great benefit to humanity, but many have caused great disruption to natural ecosystems.

Within this migration were the cultivated and domesticated species from Eurasia: animals such as horses, cows, chickens, sheep, goats, pigs and honeybees; and plants, such as wheat, peas, lentils, olives, apples and citrus. At the same time, invasive species around the world often have a Eurasian origin: the largest landmasses are also ecologically the most competitive, and smaller landmasses often have organisms that lose to that competition.

Some of the worst-offending Asian invasive plants of the Western Hemisphere include Himalayan blackberries, reed canary grass, thistles, knotweed and pampas.





1  
Chukotka, Russia:  
A Chukchi herder out on  
the tundra

2  
Alaska, USA:  
An elder female Yupik woman  
sitting outside her house

There are also unwanted species of earthworm, fish, starlings, mynahs, doves, and other animals. Worst of all are the uncountable insects and the ecologically devastating fungal infections that ravage entire landscapes. These can be considered global pathogens that have an important ecological niche in their home ranges, but cause a horrific rampage when in a new environment.

Indeed, all of the continents and oceans of the world are undergoing wrenching, dramatic change as organisms travel around the world at the evolutionary equivalent of light speed. Still, it's important to remember that the migrations earlier in geological time also had strong impacts on their new environments. The difference is that they happened much more slowly and much more rarely.

### Returning home

Not all of these modern ecological migrations from Asia to the Americas are unprecedented. Some of the Asian arrivals to the Americas are actually returning to their ancestral home.

The dawn redwood, the ancient redwood tree that somehow survived in China, has managed to return to

the North American region where it grew many millions of years ago. After scientists from China and the USA recognised these trees as "living fossils", they were planted as ornamental trees around the world. You can find dawn redwood growing in cities not too distant from sites harbouring their fossils.

If you travel to the eastern US state of North Carolina, you can find an afforestation project seeking to re-establish dawn redwoods on the continent it once called home. This raises some difficult questions: Is this an ecological restoration of a forest that disappeared long before humanity, or a quixotic effort that detracts from more obvious conservation efforts?

### Asians in America

While our distant ancestors had a long and arduous journey from Africa, across Asia, across Beringia, along to South America, we can now travel that distance by air in a matter of hours. Whereas organisms were once blocked by waterways and land barriers, we now build roads, canals, bridges and transport networks that facilitate the arrival of wild species into new environments.

It's clear that we are living in the most dynamic period of biogeographical exchange to ever occur on Earth. The "out of Asia" story is actually more prevalent than, for example, the "out of Australia" one. Due to its size and connectivity, the Asian continent has been involved in more biological transactions – inwards and outwards – than the other landmasses.

The fact that North America and Asia are separated by water in the present day is anomalous – during much of geological history these continents were linked. The American and Asian continents share a common ecological heritage, trading species, ideas and people since they were part of Pangaea. With our transportation technology, we are bridging the straits and leaping oceans; today's world is a biogeographical supercontinent. ♦ AG

---

**YD BAR-NESS** is a conservation ecologist based in Fremantle, Western Australia. As a scientist, he specialises in climbing trees to explore the canopy biodiversity and as a conservationist, he seeks to use geography and photography to create environmental education materials.  
[www.outreachecology.com](http://www.outreachecology.com)



**Tupai terbang gergasi, aka red giant flying squirrel**  
*Petaurista petaurista*  
Least Concern



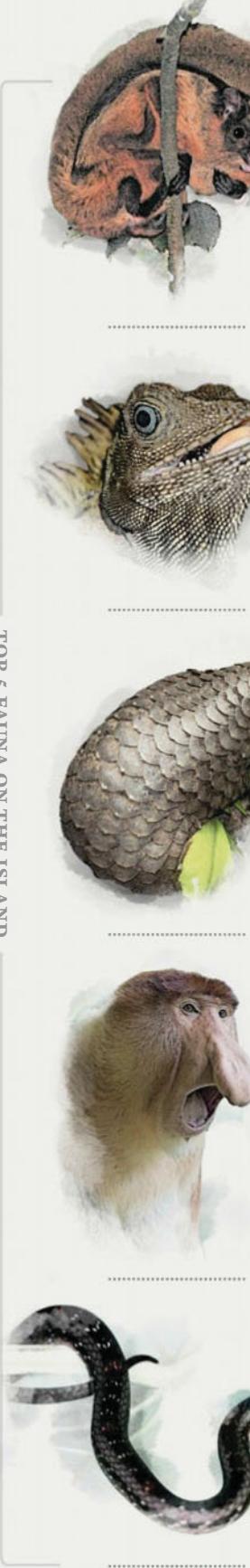
**Borneo angle-headed lizard**  
*Gonocephalus borneensis*  
Not Evaluated



**Tenggiling, aka pangolin**  
*Manis javanica*  
Endangered



**Bangkatan, aka proboscis monkey**  
*Nasalis larvatus*  
Endangered



**Jewelled kukri snake**  
*Oligodon everetti*  
Not Evaluated



**MOST INTRIGUING ANIMAL SPECIES }**

**Barred eagle-owl** *Bubo sumatranaus*

- One of the biggest and rarest owls
- Boasts an eagle-like mandible

◆ GAYA ISLAND ◆

- Hill Trail • 1.8KM
- Monkey Trail • 1.5KM
- Tavajun Trail • 850M



When Resident Naturalist Justin Juhun and his team from the Gaya Island Resort discovered a large volume of fine sand deposited on the island's upper tiers, it gave inspiration to find out more about this island paradise. Once part of the seabed, the deposits reached high elevations through a process called sudden upheaval, which took place about 100,000 years ago and also influenced the formation of the majestic Mount Kinabalu. The 1483-hectare island became part of Sabah's second national park in 1974, to protect its fauna, flora and marine ecosystems. Located





**MOST  
INTRIGUING  
PLANT SPECIES }**

**Sundew** *Drosera*

- One of the largest genera of carnivorous plants
- Capable of catching small dragonflies

on the northwest of the state of Sabah about 1.7 kilometres offshore, it is easily accessible from Kota Kinabalu city.

#### GEOLOGY

The geological formation of Gaya Island was initially linked to the formation of Crocker Range, but the island became isolated from the massif when sea levels rose after the last ice age. This type of geological formation resulted in a combination of flysch sandstone, shale, and siltstone, with rare tuff, limestone, breccia and agglomerate. From a height of around 300 metres in the centre, Gaya's jungle-clad hilly slopes lead down to secluded bays, sandy beaches and patches of mangrove forest, providing about 20 kilometres of prime hiking trails.

#### VEGETATION

Undisturbed coastal dipterocarp forest and mangrove swamps can still be found on Gaya Island. A dipterocarp forest is one dominated by members of the Dipterocarpaceae family, magnificent trees that grow up to 30 metres (and even higher in mainland forests).

The island's tropical lowland forest includes various species of figs, which provide an abundant source of food for a range of birds and monkeys.

The coastline is outlined with mangroves with their pneumatophores, or breathing roots, exposed at low tide. These wetlands play an important role in preventing coastal erosion and are vital breeding grounds for marine life.

#### WILDLIFE

Several of Borneo's most beautiful birds can be found here, and while the mammal population is restricted compared to the mainland, common encounters include long-tailed macaques, squirrels, civet cats and the Bornean bearded pig.

Gaya Island Resort Resident Naturalist Justin Juhun was born in Tawau, a town on the southeastern coast of Sabah. He comes from a family of wildlife enthusiasts and his passion for wildlife conservation began at an early age. He has nurtured more than 50 local wildlife species, including orangutans, Borneo pygmy elephants, Borneo gibbons and maroon langurs.

#### Did you know?

Tongkat ali is also known as:

- Bidara laut (Indonesian)
- Babi kurus (Javanese)
- Cây bá bệnh (Vietnamese)
- Tho nan (Laotian)



**Tongkat ali**

*Eurycoma longifolia*  
Angiosperms\*



**Keruing rapak**

*Dipterocarpus kunstleri*  
Large hardwood timber



**Pisang pisang**

*Uvaria grandiflora*  
Liana (climbing plant)



**Kulat kayu,  
aka true mushroom**

*Lentinus sajor-caju*  
Fungus



**Tambaka**

*Curculigo latifolia*  
Shrub tree

MOST INTRIGUING  
PLANT SPECIES**Orchids**

- *Bulbophyllum annandalei*
- *Vrydagznea albida*
- *Collabium simplex*
- Angiosperms\*

MOST INTRIGUING  
ANIMAL SPECIES**Asian palm civet,  
aka toddy cat**

*Viverra tangalunga*  
Threatened

**Plantain**

*Plantago major*  
Edible plantain species  
with medicinal uses

**Crowned hawk-eagle**

*Stephanoaetus coronatus*  
Near Threatened

**Citronella**

*Cymbopogon nardus*  
Angiosperms\* belonging  
to the "true grasses" family

**Wood owl**

*Strix leptogrammica*  
Least Concern

**Golden yellow balsam**

*Impatiens dalzellii*  
Angiosperms\*

**Leopard cat**

*Prionailurus bengalensis*  
Least Concern

**Lipstick plant**

*Aeschynanthus radicans*  
Vine-like plants native to  
the Malay Peninsula

**Javan gold-spotted mongoose**

*Herpestes javanicus*  
Least Concern

## TOP 5 FAUNA IN THE AREA



Main Road  
River

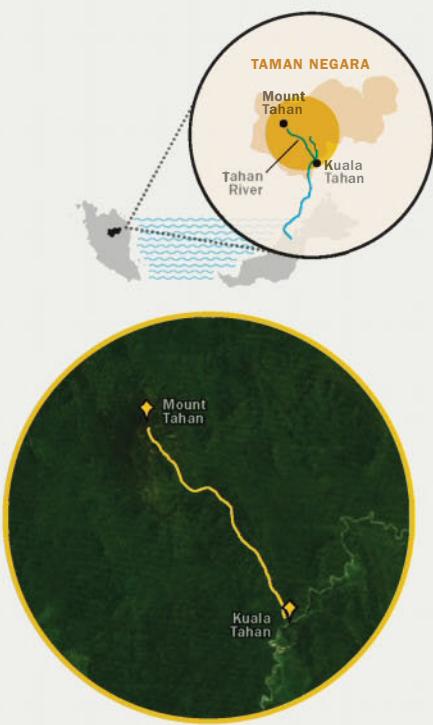


## ◆CAMERON HIGHLANDS◆

The Cameron Highlands is one of Malaysia's most extensive hill stations. Situated at the northwestern tip of Pahang, it occupies an area of over 700 square kilometres in the Titiwangsa Mountains. To the north, its boundary touches that of Kelantan; to the west, it shares part of its border with Perak. It is also home to the Jim Thompson trail, named after the American silk merchant, renowned in Southeast Asia in the 1950s and 60s, who went for a stroll after lunch on March 26, 1967, and never returned...

## VEGETATION

About 1,500 metres above sea level, the Jim Thompson trail offers an abundance of rhododendron trees, the acidic soil being the reason why tea plants also thrive in the area. The abundance of soft wood trees has also encouraged the growth of introduced pines to the charming landscape. The forest here is described as a pith forest, a cloud forest or a tropical rain forest. Its mossy forest is only found on the highest peak, Mount Brinchang, standing at 2,222 metres above sea level. Here, the trees are short and the roots shallow.



## ◆ TAMAN NEGARA ◆ (MALAYSIA)

Estimated at 130 million years old, Taman Negara is billed as the oldest tropical rainforest in the world. It is home to Gunung Tahan (Mount Tahan), the tallest mountain in Peninsula Malaysia (2,187 metres). This pristine land propagates, protects and preserves the country's indigenous flora and fauna. There are about 15,000 flowering plants and more than 1,100 species of fern and fern allies, many of which are unique to Malaysia. As well, the diverse habitat of TNNP houses 54% of birds in the country.

### GEOLOGY AND VEGETATION

Taman Negara contains diverse types of forests, including lowland rainforests and mountain forests. None of the ice ages had an effect here. Most of the area lies on sedimentary rocks (mainly sandstone and shale) and there are also some scattered limestone outcrops at caves.

### WILDLIFE

The diverse habitat of Taman Negara houses around 54 percent of the birds in Malaysia. Approximately 300 species of mammals, 750 species of birds, 350 species of reptiles, 165 species of amphibians and more than 300 species of freshwater fish are well within the trekker's horizon.

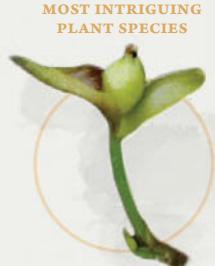
### TOP 5 FAUNA IN THE AREA



#### Malaysian peacock-pheasant

*Polyplectron malacense*

Endemic to lowland forests  
of the Malay Peninsula



#### *Utricularia vitellina*

The only endemic  
species of *Utricularia* in  
Peninsula Malaysia



#### Hill prinia

*Prinia atrogularis*

Least Concern



#### Kuang cermin+, aka mountain peacock-pheasant

*Polyplectron inopinatum*

Vulnerable

\*endemic



#### Sebasah

*Aporosa globifera*

Angiosperms\*



#### Tampang besi

*Callicarpa maingayi*\*

Angiosperms\*



#### Malayan tiger

*Panthera tigris jacksoni*

Endangered



#### Mempening

*Lithocarpus curtisii*

Angiosperms\*



#### Golden mahseer

*Tor putitora*

Endangered



#### Rafflesiaeaceae

*Brugmansia lowii*

Angiosperms\*



#### Kuang raya gunung+, aka crested argus

*Rheinardia ocellata*

Near Threatened

\*endemic



#### Putat

*Barringtonia fusiformis*

Angiosperms\*



**White-bellied sea eagle**  
*Haliaeetus leucogaster*  
Least Concern



**Great hornbill**  
*Buceros bicornis*  
Near Threatened



**Malay peacock-pheasant**  
*Polyplectron malacense*  
Vulnerable



**Water monitor lizard**  
*Varanus salvator*  
Least Concern

**MOST INTRIGUING } ANIMAL SPECIES**

**Oriental pied hornbill** *Anthracoceros albirostris*  

- Found on the Indian Subcontinent and in Southeast Asia
- Occupies subtropical or tropical moist lowland forests

## ◆PANGKOR LAUT◆

Although Pangkor Laut lacks a street address, world travellers can nevertheless locate it at 4.1908° N, 100.5400° E. It is a

PANGKOR LAUT ISLAND





MOST  
INTRIGUING }  
PLANT SPECIES }

**Sea almond tree** *Terminalia catappa*

- Grows mainly in the tropical regions of Asia, Africa and Australia
- Humans have spread the tree widely, so the native range is uncertain

120-hectare granite island bathed by the year-round warm waters of the Malacca Straits. It has a long sinuous coastline alternating between sandy bays and rocky headlands, rising steeply to around 112 metres on bedrock of solid granite. Beach sand found at this elevation indicates this area was once underwater.

Three spectacular treks reveal the majesty of Pangkor Laut's virgin rainforest, estimated to be over two million years old. Crab-eating macaque monkeys and tropical monitor lizards roam these jungles, and the low-fertility soil invites a raft of nutrient recyclers, from fungi and termites to carnivorous plants.

**VEGETATION**

The copious rains that douse this tropical island throughout the year make for conditions that could not be more ideal for plant growth. As a result, the island is

covered by a mantle of lush green vegetation, which often comes down to the waterline. Primary rain forest still covers much of the island, especially on its central spine of low coastal hills.

**WILDLIFE**

When the last Ice Age retreated, about 10,000 years ago, Pangkor Laut was physically separated from its neighbour Pangkor Island and the mainland, leaving some animals that do not fly or swim left stranded on the island. In the distant past, the island's remoteness was its own protection, but species have suffered many privations since man's arrival – reduced food supplies, loss of breeding grounds and habitat destruction. Consequently, much of the island's wildlife has been decimated, especially those species with food value. However, many species have held their own, and these animals are the most visible on the island today.



**Keruing**

*Dipterocarpus*

Native hardwood used in outdoor furniture



**Casuarina tree**

*Casuarina equisetifolia*

Evergreen tree growing up to 35 metres



**Bertam**

*Eugeissoona tristis*

Angiosperms\* in the palm family



**Jambu Laut,  
aka Sea apple**

*Syzygium grandis*

Coastal tree found throughout the Malay Peninsula



**Mersawa**

*Anisoptera costata*

Endangered species of emergent tree that grows up to 65 metres

**Meranti**

- *Shorea leprosula*
- *S. gibbosa*
- *S. argenteofolia*
- *S. johorensis*
- *S. superba*

Angiosperms\* in the  
Dipterocarpaceae  
family

**Peacock Spikemoss**

*Selaginella uncinata*

Originating in China,  
from the Selaginellaceae  
family

**Chengal**

*Neobalanocarpus heimii*  
Angiosperms\* endemic  
to the Malay Peninsula

**Nyatoh**

*Pouteria linggensis*  
Angiosperms\* found  
in Asia's tropical  
rainforests

**Palawan**

*Tristania whiteana*  
Angiosperms\* native  
to tropical Asia

**Dragonfly**

*Raphismia bispina*

**Giant millipede**

*Diplopoda gigas*

**Sunbear**

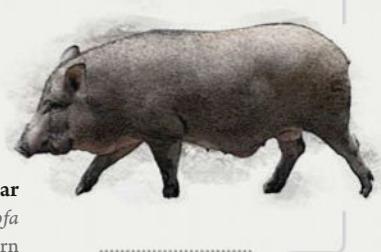
*Helarctos malayanus*  
Vulnerable

**Mouse deer**

*Tragulus kancil*  
Least Concern

**Tapir**

*Tapirus indicus*  
Endangered

**Wildboar**

*Sus scrofa*  
Least Concern

TOP FAUNA UNIQUE TO THE AREA

ON THE RARE LIST

TOP FAUNA UNIQUE TO THE AREA

**◆ TANJONG JARA ◆**

Encompassing an area of nearly 300 hectares, the Chemerong Recreation Forest is located in the Pasir Raja Forest Reserve in Dungun District, Terengganu. Its unique attractions include trekking through virgin forest and climbing to one of the highest waterfalls in Malaysia, which thunders 300 metres down the slopes of 1,108-metre-tall Gunung Berembuan. A splendid range of flora and fauna can be found along the two-hour walk to the foot of the waterfall, and the cool, clear waters offer a welcome respite from the tropical heat.

**VEGETATION AND PLANT LIFE**

Enormous teak trees and large boulders line the trail to the base of the waterfall, and epiphytes and stranglers are commonly found under the rainforest canopy.

**WILDLIFE**

Animal life can be rather inconspicuous during the walk. While footprints of certain species may be spotted by the trained eye, many others are heard rather than seen.

Capt (Rtd) Mokhtar Mohamad, Tanjong Jara Resort's Resident Naturalist, once lived for two years with nomadic tribes in a remote jungle above a waterfall as an undercover intelligence officer of the Malay Special Forces during the Communist insurgency of the 1970s. He has an intimate, practical knowledge of the web of life in virgin rainforests that could never be learnt in a classroom, and a range of lethal skills.



## ♦ GREAT BAIKAL TRAIL ♦ (RUSSIA)

The Listvyanka–Bolshiye Koty section of the Great Baikal Trail is located within the Pribaikalsky National Park, in the Irkutsk Region. The park, which encompasses the land along the western bank of Lake Baikal as well as Olkhon Island, was established in 1986 to preserve the unique natural systems of Lake Baikal. Occupying the eastern slopes of the grand Primorsky Range – with elevations varying between 450–1,000 metres – this trail is notable for its plant and animal diversity.

### VEGETATION

The distribution of vegetation in the park varies with elevation: forest-steppe forests of common pine and larch are confined to the bank areas and the lower mountain belt; subtaiga pine forests form the lower part of the forest belt. Baikal's coast is almost entirely occupied by the taiga-steppe altitudinal climatic belt. Thus, most of the area at the ranges' slopes and tablelands in the range is covered by light coniferous forests. The higher slopes, however, are clad with dark coniferous vegetation: cedar and fir-tree forests, pine and larch woods.

### WILDLIFE

The varied wildlife fauna of the southwestern and western areas of the Baikal region is largely the result of the fact that many of the animals found locally live on the edge of their geographic range. In all, approximately 380 vertebrates, 60 mammals, 270 birds and more than 40 species of fish have been recorded in the park – many of the rare ones endemic to the Baikal region. Typical Siberian fauna include the Russian flying squirrel and the large-toothed redback vole.

### MOST INTRIGUING ANIMAL SPECIES



#### Baikal oilfish

*Comephorus baicalensis*

- Forty percent of its body weight is made up of oil
- Pelvic bones are present, but pelvic fins are lacking

### MOST INTRIGUING PLANT SPECIES

#### *Astragalus olchonensis*

- Endemic that only occurs at the Pribaikalsky Park
- Grows on sand dunes autumn



### Demoiselle crane

*Anthropoides virgo*

Least Concern



### *Cotoneaster lucidus*

Angiosperms\*



### Saker falcon

*Falco cherrug*

Endangered



### *Deschampsia turczaninowii*

Angiosperms\*



### Baikal seal

*Pusa sibirica*

Least Concern



### Siberian dwarf pine

*Pinus pumila*

Gymnosperms\*\*



### Baikal omul

*Coregonus migratorius*

Not Evaluated



### Baikal sturgeon

*Acipenser baerii baicalensis*

Endangered



### *Hedysarum cisbaicalense*

Angiosperms\*



TOP 5 FAUNA IN THE AREA

TOP 4 FLORA IN THE AREA

**Clouded leopard***Neofelis nebulosa*

Vulnerable

**Sumatran serow***Capricornis sumatraensis*

Vulnerable

**Vietnamese pond turtle***Mauremys annamensis*

Critically Endangered

**Delacour's langur***Trachypithecus delacouri*

Critically Endangered

**Red-bellied squirrel***Callosciurus erythraeus cucphuongensis*

Vulnerable



MOST  
INTRIGUING  
ANIMAL SPECIES

***Cyrtodactylus cucphuongensis***

- New species of bent-toed gecko (discovered in 2012)
- Endemic to the Cuc Phuong National Park





MOST  
INTRIGUING }  
PLANT SPECIES }

**Golden vietorchis** *Vietorchis aurea Aver. & Averyanova*

- Very rare species of orchid that occurs only at Cuc Phuong
- Bright yellow flowers with orange-red stripes at the centre



**Dalbergia tonkinensis**

Angiosperms\*



**Parashorea chinensis**

Angiosperms\*



**Erythrophleum fordii**

Angiosperms\*



**Camellia  
cucphuongensis**

Angiosperms\*



**Pistacia  
cucphuongensis**

Angiosperms\*

## •CUC PHUONG NATIONAL PARK• (VIETNAM)

Cuc Phuong National Park lies at the southeastern extent of Annamite Range, which runs northwest to Son La province. This limestone range predominantly comprises natural karst that was formed in the oceans approximately 200 million years ago. Most of the water Cuc Phuong receives is quickly absorbed by a complex underground system common to these mature karst landscapes, often emerging from springs on the lower slopes. For this reason, there are no natural ponds or other standing bodies of water within the park. The only permanent watercourse is the Buoi River, which feeds the Ma River in Thanh Hoa Province.

### VEGETATION

The vegetation of Cuc Phuong is dominated by forest that is stratified into many layers,

including an emergent layer that rises to 70 metres in height. Due to the steep topography, however, the canopy is often broken and gives way to individual trees displaying well-developed buttress roots in response to the generally shallow soils. Sub-soils in the valleys comprise Triassic schist layers overlaid with secondary soils while the top soils are partly red calcareous. *Terminalia myriocarpa*, *Shorea sinesis* and the deciduous *Tetrameles nudiflora* are some tree species that grow in abundance here, along with other medicinal plants.

### WILDLIFE

Cuc Phuong stands out as one of the rare areas in Vietnam that boasts high biological diversity. It acts as a green refuge for approximately 100 species of mammals (most notably its population of endangered langurs), 300 species of birds, and more than 35 reptile species. Primates in the park include macaques, gibbons and slow lorises.

\*Angiosperms (flowering plants)

**Amphidromous goby***Sicyopterus japonicus*

Not Evaluated

**Formosan whistling thrush***Myophonus insularis*

Least Concern

**Taiwan bamboo viper***Trimeresurus stejnegeri*

Schmidt

Not Evaluated

**Swinhoe frog** *Odorrana swinhoana*

- Relies on powerful suction cups attached to its webbed feet to negotiate a path in rapidly moving water
- Makes a distinctive “Chiuuu! Chiuuu!” sound, often mistaken for bird calls

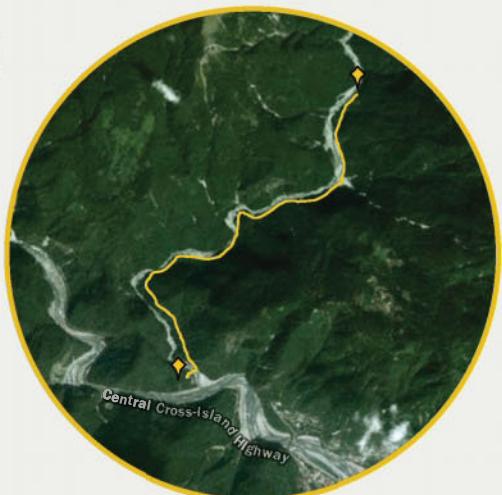
**MOST  
INTRIGUING  
ANIMAL SPECIES**

**Plumbeous water redstart***Rhyacornis fuliginosa*

Least Concern

**Taroko crab***Geothelphusa taroko*

Vulnerable





**MOST  
INTRIGUING  
PLANT SPECIES**

**Larged-leaved nanmu** *Machilus kusanoi*

- The elliptical leaves grow to a length of 15 cm, making them the largest of all nanmu species
- Distinguished by the pale magenta hue of new leaves that sprout during autumn

## ♦ SHAKADANG ♦ (TAIWAN)

Shakadang means “molar” in the Taroko indigenous language and refers to the Shakadang River – the Shakadang trail’s main attraction and the last major tributary of the 16-kilometre-long Liwu River as it journeys towards the Pacific Ocean. Over many centuries, Shakadang’s pristine clear waters have carved steep gorges along its course, revealing impressive stone folds and formations complemented by dense forests and lush vegetation. The area in the vicinity of the trail still holds as major living grounds for the native Taroko tribal people.

### GEOLOGY AND VEGETATION

The elevation of Shakadang rises to approximately 60 metres above sea level.

Along the trail, one will find marble and gneiss stones as well as geologic folds. In the relatively flat areas of Shakadang there is sufficient soil to accommodate large plants such as the large-leaved nanmu. In steeper areas, the ground is relatively dry and soil is much thinner as it is more susceptible to the forces of the elements. Hence, plants here tend to be drought-resistant lithophytes.

### WILDLIFE

An abundance of wildlife thrives in the luxurious foliage and clean waters surrounding the Shakadang River. The area is home to a wide array of fish, many kinds of frogs and several species of mountain birds. One of Taiwan’s ecological miracles, the area houses the famed Formosan macaque (*Macaca cyclopis*), one of the only two members of the primate order native to the country.



**Subcostate crape myrtle**

*Lagerstroemia subcostata* Koehne  
Angiosperms\*



**Camphor tree**

*Cinnamomum camphora*  
Angiosperms\*



**Chinese banyan**

*Ficus microcarpa* var. *microcarpa*  
Angiosperms\*



**Ring-cupped oak**

*Cyclobalanopsis glauca*  
Angiosperms\*



**Konoshi fig**

*Ficus variegata*  
Angiosperms\*

{ AFGHANISTAN }

# Walk on the Wild Side

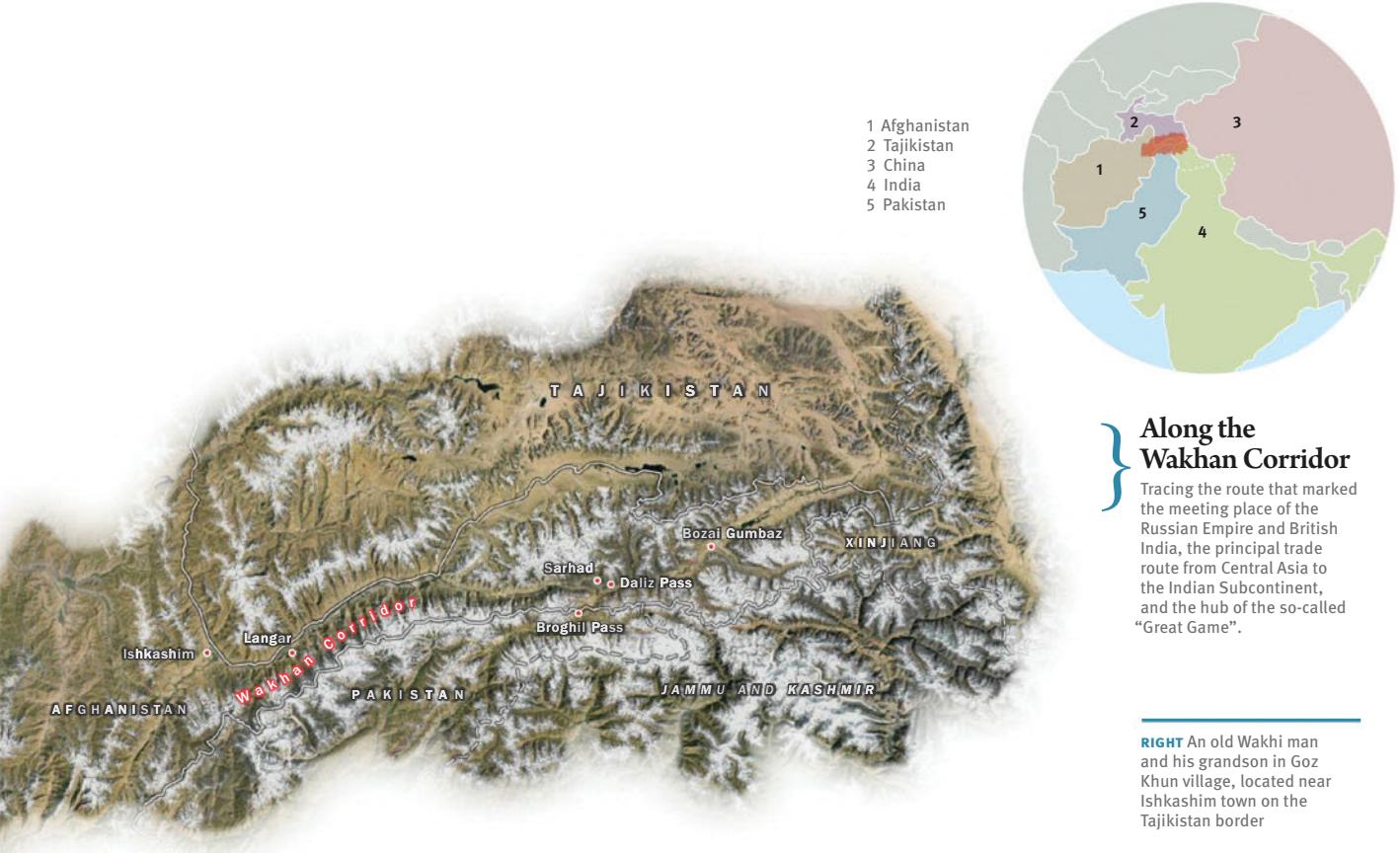
••• *In the footsteps of  
Great Game explorers*

◆◆◆ TEXT  
Sophie Ibbotson &  
Max Lovell-Hoare

Sandwiched between the mountains of the Hindu Kush and Karakoram, the Wakhan Corridor linking Afghanistan and China played a vital role in the 19th-century battle for control in Central Asia. Today, devoid of electricity and all extravagance, the Wakhan is a window into history centuries ago.



View of the Wakhan Valley from the southwest, generated using ray-tracing techniques based on satellite data



- 1 Afghanistan
- 2 Tajikistan
- 3 China
- 4 India
- 5 Pakistan

## Along the Wakhan Corridor

Tracing the route that marked the meeting place of the Russian Empire and British India, the principal trade route from Central Asia to the Indian Subcontinent, and the hub of the so-called "Great Game".

**RIGHT** An old Wakhi man and his grandson in Goz Khun village, located near Ishkashim town on the Tajikistan border

## There is a far, forgotten corner of Afghanistan where foreigners need not fear to tread.

Some 100 years or so ago, this narrow sliver of territory, which juts out like a finger pointing straight at China, was central to the political and economic concerns not just of Afghanistan, but of the world. It marked the meeting place of the Russian Empire and British India; the principal trade route from Central Asia to the Indian Subcontinent; and the hub of the so-called "Great Game", where spies, explorers and military officers danced in diplomatic shadows.

More than a century on, the Wakhan Corridor is all but neglected, and in terms of security at least, that's a good thing. The Soviet war in Afghanistan, between 1979 and 1989, left little behind, save some long abandoned hardware, and the Taliban remained largely in their traditional heartlands in the country's south. Few people made the arduous journey on foot to the wild lands in the north. Now, only Wakhi and Kyrgyz nomads drive their flocks here, spurred on with the help of the Aga Khan, spiritual leader of the Ismaili community and, at least where rural schools and community centres are concerned, miracle worker.

We first came to the Wakhan in June 2010, taking a brief diversion into the valley while delivering aid

vehicles from London to Faizabad, Badakhshan. This first glimpse set in motion a yearning to discover what lay beyond the cragged horizon, nestled betwixt the snow-capped Pamir and Hindu Kush, and so a year later, we returned to follow in the footsteps of some of the 19th century's greatest explorers.

These days, all journeys in the Wakhan begin in Ishkashim, the border town that straddles the Panj River (the Oxus of antiquity), a bridge linking Afghanistan with its northern neighbour, Tajikistan. Passes into China – which archaeologist and explorer Aurel Stein recorded 100 laden ponies crossing when he visited in 1906 – are now closed to foreigners, as is the way to Chitral in northern Pakistan. Those on the Afghan side gaze longingly at the tarmac roads and twinkling lights of Tajikistan; car batteries and the occasional generator are the only sources of electricity here.

The Panj River is central to the Wakhan and its history. It has carved the valleys and irrigates the small patches of cultivated land along the valley floor. The search for the river's source brought a succession of British explorers, Lord Curzon (later Viceroy of India), Lieutenant Colonel Sir Francis Younghusband, Lord Dunmore, Lieutenant John Wood and Colonel Trotter amongst them. To walk in the wilds of the Wakhan is to walk in the footprints of history.

From Ishkashim, we drove our battered Land Rover to Sarhad-e Broghil, at the end of what passes for a road in the Wakhan. Constructed in the 1960s, it is a road in the very loosest of senses: travelling the little more than 80 kilometres along its length takes a full day of driving, broken dirt track interspersed with gravel riverbed and several river crossings. Even in September, when the rivers are low and the waters as yet unfrozen, it's an exhausting, bone-shaking drive, though undoubtedly preferable to crossing the same terrain on foot.

The road, such as it is, peters to a halt at Sarhad, however, and from there on the only way is on foot. In his journal, Aurel Stein wrote, "Between Sarhad and the stage of Langar the valley contracts into a succession of defiles difficult for laden animals in the spring, when the winter route along the river bed is closed by the flood water, while impracticable soft snow still covers the high summer-track."

Nothing has changed at all. The narrow pathway – first across the 4,267-metre Daliz Pass, which we crossed panting and wheezing thanks to poor fitness and altitude, and then winding its way to the smattering of mud huts at Langar, used as rest stops by shepherds moving their flocks – clings to precipitous rock. Though one or two wooden footbridges have been built, they scarcely look capable of taking a man's weight, let alone that of a pony weighed down with packs. The days are bright, but there's ice on the tents in the early morning, despite it being late summer, and even a smattering of snow now and then.

♦♦♦

**The road, such as it is, peters to a halt at Sarhad, however, and from there on the only way is on foot.**





The Wakhan Corridor separates Afghanistan to the left of the Panj River from Tajikistan on the right of the river. This valley through the Pamir Mountains was once part of the Silk Road

It's not until the fourth day of walking that we see signs of permanent human habitation: a solitary yurt, a family and their herd of yaks. Life in the Wakhan is unbelievably tough – life expectancy is just 45 years – but the family is hospitable, welcoming us inside for steaming tea in porcelain bowls, sweetened with a little sugar, and large, flat bread that is softer if you dip it in the tea. Looking at their simple belongings, it's hard not to think back to Curzon and his entourage who came here searching for ice caves in 1894. They too carried everything with them, but unlike the modern traveller, Curzon felt it essential to carry his own collapsible rubber bath. Whether he was ever able to heat enough water to use it, however, remains one of the Wakhan's enduring mysteries!



## The Wakhan Corridor may look more or less as it has done for centuries, but change is on the way.

We reached Bozai Gumbaz by mid-afternoon, the red dresses of the Kyrgyz women standing out strikingly against the greenish grey of the surrounding landscape. This was where Francis Younghusband met the Russian Colonel Yonoff in the early 1890s, sharing champagne, caviar and three days of frivolity before sparking the so-called Pamir Incident and narrowly avoiding war. Our meals were far more meagre pickings: dried fruits and nuts purchased in Khorog before leaving Tajikistan, army-style ration packs and plenty of stodgy porridge.

Though the landscape and yurts remain unchanged, there is one important development here: in 2011, the Central Asia Institute built a school. Made famous in Greg Mortenson's *Stones into Schools*, this is the first time that local children have had access to education. In three simple classrooms, teachers give lessons in Persian and English; the curriculum includes maths, sciences and literature.

The Wakhan Corridor may look more or less as it has done for centuries, but change is on the way. There is talk of a road to China and a reopening of the Broghil Pass to Pakistan. If you look closely, you'll already spy occasional solar panels and mobile phones (albeit without network coverage). The children, once educated, will ask for something more than eking out a life at the end of the world. If you want to see the

**BELOW** The majority of the people of the Wakhan Corridor are farmers or herdsmen. Hope for the people and the local economy is opening the area for tourism

**BOTTOM** Sarhad village, inhabited by Wakhi people, is at the end of the motorable road in the Wakhan Corridor and the beginning of the trek up to Little Pamir, where the Afghan Kyrgyz live



Wakhan as a wilderness, now is the time to go. The world can change in a heartbeat, and once the Wakhan's potential is exploited, the traditional Wakhi way of life will quickly disappear. ♦ AG

SOPHIE IBBOTSON and MAX LOVELL-HOARE

run Maximum Exposure Productions ([www.facebook.com/MaximumExposureProductions](http://www.facebook.com/MaximumExposureProductions)), which specialises in investment promotion in developing economies. In September 2014, they will be leading another expedition to the Wakhan, this time on behalf of the Royal Society for Asian Affairs ([www.rsaa.org.uk](http://www.rsaa.org.uk)), a registered educational charity whose founders include Wakhan pioneer, Francis Younghusband.



Text and Photos Amardeep Singh

Zorawar Singh (1786–1841), born at Kahlur, then part of Punjab, India, rose to become a general in Maharajah Ranjit Singh's Sikh kingdom. From 1834 till his death, he led military expeditions to expand the Sikh kingdom to Ladakh, Baltistan and Tibet. The 4,000 kilometres he covered on foot with his soldiers, crossing the high Himalayan mountain passes, is a one-of-a-kind achievement in the annals of world military history.

In 1834, Zorawar started from Jammu and entered Ladakh, crossing the Lanvila Pass at 4,420 metres. He captured Leh and built forts in this region. By October 1835, Zorawar had returned to Kishtwar, but on hearing reports of rebellion, he undertook an arduous journey via the 5,273-metre Umasila Pass to reach Leh via Zanskar in 10 days.

Zorawar's expedition to Baltistan, in the Karakoram Range, took place in 1840. It wasn't long before he had captured the mountainous territory from the forces of Ahmed Shah Durrani of Afghanistan. Thereafter, Zorawar returned to Leh via Nubra Valley, a high altitude cold desert located at 3,048 metres.

In 1841, he turned his attention to the roof of the world, leading him to Western Tibet. Crossing Pangong Tso Lake at 4,359 metres, he travelled via the Guge Kingdom, along Tholing and Purang to Mount Kailash and then on to Mansarovar.

At the Purang Valley, separated from Mansarovar by the Gurla Mandhata Range, his forces climbed the Gurla Pass and reached Dogpacha. Here, they were caught totally off-guard by Tibetan forces. A fierce hand-to-hand battle resulted in victory for Zorawar, who captured the Tibetan Army's "colours" flag, which today remains in the custody of the Indian Army.





ABOVE In honour of a great warrior, the statue of Zorawar Singh stands in the Zorawar Fort

ABOVE RIGHT Zorawar Singh built forts in the region of Ladakh after capturing Leh

LEFT The fort of Zorawar Singh at Leh, Ladakh

BELLOW Zorawar Singh's pistol lies in Sukhbinder Singh's private collection in London



After a detour to Mount Kailash and Mansarovar, Zorawar's army turned south towards Taklakot, where a battle was fought with Tibetan forces at the high altitude Mayum Pass (5,182 metres). Over just three months, a huge area of Tibetan territory was captured by General Singh.

By then, winter was approaching. The general decided to move to Tirthapuri and prepare for offenses in the coming summer months. He had sealed the Mayum Pass before winter, but made the strategic mistake of not taking into account that forces from Lhasa could ambush him via the Matsang Pass, south of the Mayum Pass. In the peak winter

months, Tibetan forces attacked through the Matsang Pass and again caught Zorawar off-guard. This time, the result was a high altitude battle during one of the toughest winters his men had experienced. Suffering from frostbite, many of Zorawar's soldiers perished due to insufficient clothing.

On December 12, 1841, during a fight at Taklakot, Zorawar took a bullet to his left shoulder, eventually leading to his demise. General Singh's severed head was subsequently carried to Lhasa and placed for public viewing.

Many of Zorawar's soldiers crossed back into British India, but only 242 reached Askot in Kumaon. Tibetans recognised the valour of General Singh by building a cenotaph at Taklakot. Even today, Tibetans call it *Singh Ba Chorten*, or the "Cenotaph of the Singh Warrior", a man who marched the high altitude passes with the selfless motive of expanding the kingdom of Maharajah Ranjit Singh. ♦ AG



**AMARDEEP SINGH** is an engineer with an MBA from the University of Chicago. His photography can be viewed at [www.amardeepphotography.com](http://www.amardeepphotography.com).



[NORTH ASIA]  
RUSSIA

## Yermak Timofeyevich

---

**PERIOD OF EXPLORATION**

Circa 1540 to 1585, the year he drowned during a battle

---

**DESTINATION**

Siberia

Who says pirates are doomed to have eye patches and speak to parrots? Yermak Timofeyevich was a pirate who looted ships sailing down the Volga River, but was later employed by the wealthy Stroganoff family to defeat Kumchun, Khan of Sibir. Even though Yermak's conquest of Siberia is seen as responsible for paving way for Russian exploration and settlement in West Siberia, the specifics of his life largely remain a mystery till today.



[EAST ASIA]  
CHINA

## Zheng He

---

**PERIOD OF EXPLORATION**

1405 to 1433, the year he died at sea

---

**DESTINATIONS**

Seven voyages ("Treasure Voyages") to Southeast Asia, Persian Gulf, Egypt, South Asia, Middle East and East Africa

Years before Columbus went to sea in search of the ocean route to Asia, Zheng He was venturing the Indian Ocean and Western Pacific with the Treasure Fleets, vessels apparently much larger than any other wooden ships in history, over the course of seven voyages. Chinese dominance over most of Asia was solidified in the 15th century due to Zheng He's fulfilled goals of diplomacy, scientific achievement and commercial relations. As such, he played a significant role in making China far more technologically advanced than any other culture of the time.



[WEST ASIA]  
MOROCCO

## Ibn Battuta

---

**PERIOD OF EXPLORATION**

1325 to 1354

---

**DESTINATIONS**

Central Asia, South Asia, China, Southeast Asia, Somalia, Swahili Coast, Mali Empire, West Africa, Mauritania, Maghreb, Arab Mashriq, Spain, Byzantine Empire, Eastern Europe

Ibn Battuta travelled more than anyone else in the Middle Ages – three decades and more than 120,000 kilometres on horseback, on foot and by boat. More importantly, he documented his journeys and his thoughts and observations, becoming the most reliable source of geography in that era and a figure of authority on the cultural and social history of Islam.



[SOUTHEAST ASIA]  
BORN IN SUMATRA,  
RESIDED IN MALACCA

## Enrique de Malacca

---

### PERIOD OF EXPLORATION

1511 to (unknown)

---

### DESTINATION

Circumnavigation of the world  
(westwards from the Malay  
Peninsula, and back)

When we talk about the first man to circumnavigate the Earth, Portuguese explorer Ferdinand Magellan readily comes to mind. However, in fact, although Magellan planned the epic voyage, he didn't complete it, instead dying at the hands of Lapu-Lapu, ruler of the Filipino island of Mactan. So if Magellan wasn't the first, who was? Some maintain that a Malay man, who was Magellan's slave, should hold that prestigious title. Enrique de Malacca accompanied Magellan on all his voyages, including his attempt to circumnavigate the Earth. Some historians suggest that when Magellan was killed in 1521, Enrique continued on other ships back to the Malay Peninsula, where he had first been enslaved by the Portuguese a decade before. No document can verify the claim, but it is heartening to conclude that a Malay slave became the first person to circumnavigate the globe.



[SOUTH ASIA]  
INDIA

## Nain Singh Rawat

---

### PERIOD OF EXPLORATION

1855 to 1875

---

### DESTINATIONS

Central Asia and Tibet,  
beyond the Himalayas

Disguised as a Tibetan monk, Nain Singh Rawat secretly explored many unknown territories in Central Asia and Tibet. He played a huge role in mapping Central Asia using the information he gathered and was the first to determine the exact altitude and location of Lhasa, as well as map the course of the Tsango river and determine that the Tsang Po and Brahmaputra rivers came from the same source, which helped establish a trade route from Nepal to Tibet. As a "spy explorer", however, he never gained proper recognition from the British, and because he worked for the British, he was also never recognised by the Indian government.



[CENTRAL ASIA]  
KHWAREZM, NOW  
KARAKALPAKSTAN, UZBEKISTAN

## Abu Rayhan al-Biruni

---

### PERIOD OF EXPLORATION

1017 to 1037

---

### DESTINATIONS

Central Asia to Iran, Afghanistan,  
northwestern India

Muslim scholar Abu Rayhan earned the title of "founder of Indology" after his travels to the Indian subcontinent. During his journeys, he studied Hindu philosophy, geography, mathematics and religion from Indian scholars. He also learned Sanskrit in order to read the ancient Hindu texts, recording his observations in a book titled *Tarikh al-Hind* (History of India). With the knowledge he gained, Abu Rayhan returned from his travels to become the most important interpreter of Indian science to the Islamic world.



# Down the Track

INTO ABORIGINAL LAND

Text and Photos Adrian Page

The road from Darwin, Northern Territory, to Port Augusta, South Australia – that's "The Track". Almost 3,000 kilometres long, The Track, otherwise known as the Stuart Highway, is considered Australia's adventure highway, travelling through some of the country's most desolate regions.

Today's experience of The Track is very different to the way it once was, even if, for many, driving along a tarmac road in air-conditioned

comfort can still prove challenging. It was a challenge a wiry young Scotsman took to with relish. As it turned out, it was also his downfall, but not until he had accomplished what came to be regarded as one of Australia's greatest explorations.

John McDouall Stuart, was born in 1815 in Dysart, Fife. Although small in stature, he was a gritty, determined Scot. In January 1839, his adventurous spirit found him sailing to Adelaide, South Australia, at the age of just

23. Five years later, an old employer, Captain Charles Sturt, offered Stuart the position of draughtsman on an expedition into the interior of Australia with the primary objective being to locate the "centre" of Australia and ascertain if there was an inland sea. Stuart needed no time to deliberate – he joined the team.

At this time, nothing was known about the interior of Australia, as it had not been traversed by any European settlers. Thus, the country



**LEFT** Trains now traverse the centre of Australia, which John McDouall Stuart and his team strove for so long to reach

**BELOW** Mounds of salt in a mine in Adelaide, the capital city of South Australia, where John Stuart, aged 23, first arrived in 1839

having not been surveyed, maps of the day had no landmarks. The arid interior is an unforgiving place, which Stuart soon discovered.

The 17-month-long expedition did not find any inland sea. Instead, it uncovered two of the driest and most barren regions in the country, the Sturt Stony Desert and the Simpson Desert. The “centre” also eluded them, and one team member died of scurvy and dehydration. The weary team

staggered back to Adelaide with the knowledge that although they had not achieved their primary goals, they had discovered many new landmarks and the Sturt expedition had penetrated further north than any had before.

The journey was, however, at a great cost to both Stuart and Captain Sturt, with scurvy taking its toll to the point that the latter was forced to return to England. Although Stuart remained in Australia, it took almost an entire year for him to recover before returning to his private surveying business. The experience had not deterred him from thirsting to be the first to traverse the country.

During 1846 to 1858, Stuart moved several times within South Australia, first to Port Lincoln, then the Flinders Ranges, where he worked for William Finke and then James and John Chambers, travelling out to remote areas exploring, prospecting and looking for good pastoral land. These men, as with other people associated with Stuart and his explorations, were later given recognition, which can be seen in the names of various locations in the country, particularly down The Track and close by.

The creation of The Track began on May 14, 1858, when Stuart, with support from Finke and John Chambers, set off on his first major expedition northwards between Lake Torrens and Lake Gairdner. Along with an assistant and an indigenous tracker, they set out on horseback in search of minerals and potential grazing land. When their four- to six-week expedition had extended to 12, they had travelled as far north as present-day Coober Pedy – though it would be more than half a century before the area began earning its renown as the “opal capital of the world”.



**TOP** Coober Pedy, Australia:  
Three months into their first  
expedition, Stuart's team  
got this far, a fraction of the  
distance across the continent,  
before turning back

**RIGHT** Following Stuart's  
successful explorations,  
many have benefitted  
from the developments  
that have occurred since  
communication links were  
established connecting  
communities across this  
vast country

**Surviving on half rations and minimal water was taking a heavy toll, and the constant glare of the sun was also affecting Stuart's eyesight...**

By this time, their tracker had left them. Their horses were lame and running short of fodder, and their supplies and water were almost exhausted. It was time to head back – and struggle back they did, after months and 2,400 kilometres through some of Australia's most arid areas, including the Great Victorian Desert. Despite this, Stuart had discovered over 100,000 square kilometres of

potential land for rearing sheep, and possibly more important for future expeditions, a string of reliable, semi-permanent waterholes, Chambers Creek, now Stuart Creek.

The expedition proved to be the making of Stuart in terms of his reputation, and he was awarded a gold watch from the Royal Geographical Society in recognition of his efforts. From April 1859 to October





1861, Stuart mounted five further expeditions northwards through the arid interior, each time edging that bit further north, all the while surveying the topography and locating reliable water systems for future ventures.

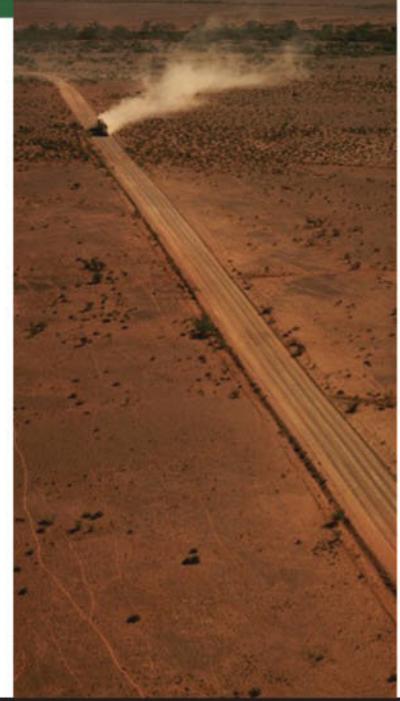
Still, each expedition was having serious detrimental effects on the health of Stuart, his companions and their horses. Surviving on half rations and minimal water was taking a heavy toll, and the constant glare of the sun was also affecting Stuart's eyesight, with one eye close to being blinded. Despite these setbacks, however, the determined Scot was intent on finally traversing the harsh landscape.

It was an era when exploration was at the forefront of people's minds. Competing expeditions were taking place in Africa to find the source of the Nile. In much the same way, there

was a keen interest for the vast land of Australia to be crossed, particularly with the advent of the relatively new invention of the telegraph. This new technology was rapidly taking shape, with cables connecting nations and the first cables under the English Channel. Plans were in motion for connecting major centres in Australia.

In Australia itself, there was growing competition for the best location of a terminus of the telegraph, with the South Australian government in the front line, proposing the shortest possible undersea cable route from the north of Australia, and then 3,000 kilometres overland to Adelaide. However, there was a major flaw: The Track from Adelaide to the northern coastline had still not been surveyed.

It wasn't long before the South Australian government was offering



## "BACK OUT THERE"

### The 2015 John McDouall Stuart Expedition

A high ranking British Army Officer has established an organisation, **BACK OUT THERE**, to help physically and mentally wounded military personnel recover from their trauma and regain their inner strength and confidence to enable them to face the challenges which await them back in civilian life.

Today, this British Army Officer with **BACK OUT THERE** is organising a gruelling 150-day, 3,500-kilometre expedition, challenging a group of Commonwealth and US military personnel to retrace John McDouall Stuart's epic journey across the arid interior across central Australia, in the mid 19th century.

This venture would challenge the fittest of service personnel equipped with modern day four-wheel drive vehicles. During this lengthy journey, **BACK OUT THERE** intends to establish links with indigenous communities on route, to exchange views and learn from each other.

*ASIAN Geographic* will be following the progress of this expedition with periodic updates via its regular contributor, Adrian Page and a full report will be published in 2015.

[www.thestuartexpedition.org](http://www.thestuartexpedition.org)



**LEFT** The Barkly Tableland, Northern Territory: A eucalyptus tree lit by the golden Australian sunlight

**RIGHT** The sacred sandstone rock, Uluru, keeps watch over the Uluru-Kata Tjuta National Park

**Stuart's forth expedition proved to be history making, as on April 22, 1860, he and his team, according to their calculations, reached the "centre" of the continent.**

a £2,000 reward for any person who traversed Australia through the centre and established a suitable route for a telegraph from Adelaide to the north coast – the Top End.

Stuart's forth expedition proved to be history making, as on April 22, 1860, he and his team, according to their calculations, reached the "centre" of the continent. Not far from this location, there is a high mount, which the pioneering team named Mount Sturt, after Stuart's former expedition leader Charles Sturt; it was later renamed Mount Stuart. A relatively modest 800 kilometres from their goal, the northern coast, the team's route was blocked by heavy scrub, which proved impenetrable. The local Aboriginals also proved to be hostile, setting fire to grass around the camp and throwing boomerangs at their horses. Unable to negotiate with these indigenous people, Stuart decided it was safer to return to Adelaide.

Although Stuart had not managed to traverse Australia, his achievement in determining the centre of Australia was huge, and it seemed only a matter of time before he would finally succeed in traversing the country from south to north.

Finally, on his sixth expedition, Stuart achieved his long-awaited goal, reaching the beach at Chambers Bay on July 24, 1862. At last, The Track had been established, an accomplishment no less impressive than John Hanning Speke's discovery of the source of the Nile, at almost exactly the same moment, on another continent.

Time and again, this diminutive Scot's determination, discipline and judgement overcame all the hardships Australia's inhospitable interior presented him with, and he brought every member of his team home alive.

Even so, the expeditions had taken a serious toll on Stuart's health, and in April 1864, he sailed back to Britain,

where he died two years later in London, aged 51.

Stuart achieved what his rivals Robert O'Hara Burke and William John Wills could not – they lost their lives in June 1861 while trying to traverse the country from Melbourne to the Gulf of Carpentaria. The Scot's remarkable achievements proved to be very important for the country. The establishment of an overland telegraph line became a reality, setting in motion the development of both Central Australia and the Northern Territory. ♦AG





**Text** Nimrod Wieler

**Photos** Nimrod Wieler and Rachel Einav

The Nabataeans (Arabs) first appeared in history in 312 BC in connection with the aggression of Alexander the Great's general, Antigonus Monophthalmus, against Petra, in modern-day Jordan. Coins from the early third century found at desert cities in the Negev confirm the presence of Nabataeans at these sites not long after their historical debut. This means that they had once been part of the thriving spice and perfume trade along the road from Petra to Gaza.

A well-known, undated inscription found on this route of commerce at Haluza (Eluza) mentions Aretas (Haritat in Nabataean), king of the Nabataeans. Thus, even before the coins were uncovered, F.M. Cross – the Hancock Professor of Hebrew and Other Oriental Languages Emeritus at Harvard University, notable for his work in the interpretation of the Dead Sea Scrolls – pronounced that the writing on the Haluza text seemed to belong to the third century BC, which further reinforces the historical evidence from the coins.

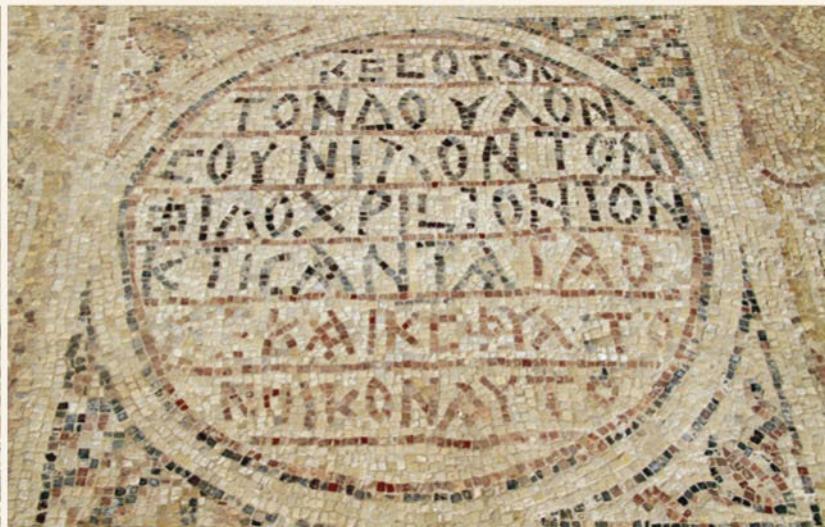
In addition, a third-century papyrus attests to the presence of the Nabataeans in Hauran, an area encompassing the northwestern corner of Jordan and southwestern Syria. It is clear, therefore, that the Nabataeans were established at Petra, in the Negev, and in the Hauran by the end of the third century. These were to remain the three great centres of Nabataean power above the peninsula of Arabia itself.

The Petra-Negev-Gaza road is part of the Incense Route, or Spice Trade. This road comprised a network of major land and sea trading routes linking Mediterranean ports across the Levant, Egypt and Arabia to India and beyond. The Incense Route served as a

### Tracing the Incense Route

The Petra-Negev-Gaza road is part of the Incense Route, comprising a network of major land and sea trading routes linking Mediterranean ports across the Levant, Egypt and Arabia to India and beyond.





**BELOW** Petra was also an important point of the incense and spice route: The hugely profitable trade in frankincense and myrrh from south Arabia to the Mediterranean, which flourished from the 3rd century BC until the 2nd century AD

**BOTTOM LEFT** The resin extracted from *Pestacia lentiscus* was used to make perfume. Today, it is used for incense and spices, fairly common in the Mediterranean

**BOTTOM RIGHT** The central inscription at the Byzantine Church of St Nilus in Mamshit



**TOP** The ruins of Avdat in the Negev Desert, south Israel: The four Nabataean towns of Haluza, Mamshit, Avdat and Shivta are spread along routes linking them to the Mediterranean end of the incense and spice route

**BETWEEN** A desert plant, *Cistanche salsa*, considered a parasite that likes the saline environment



channel for the trading of goods, such as Indian spices, precious stones, silk and fine textiles.

The Nabataeans seized Petra, which stood halfway between the Gulf of Aqaba and the Dead Sea at a point where the Incense Route from Arabia to Damascus was crossed by the overland route from Petra to Gaza. Along the Petra-Gaza road, the Negev desert cities – Avdat, Haluza, Shivta, Mampsis (Mamshit) – and many more fortresses were widely spread. These cities allowed the Nabataeans to hold sway over the trade along this route.

Greek military expeditions tried to take control of the Incense Route from the Nabataeans, but without success. It was the overwhelming power of the Romans that managed to finally oust the Nabataeans, annexing their kingdom to the Roman Empire. This enabled the Romans to rule the Negev, eventually turning this desert into a flourishing agriculture area. They established highly sophisticated agricultural installations, including cisterns, dams, and the collection of hillslope runoff, all of which are widespread in the Negev Highlands of southern Israel.

The establishment of the desert agriculture in the Levant dates back to the late Roman and Early Byzantine period, 300 to 400 AD. This activity lasted till the Early Islamic period and gradually declined from the 10th century onwards. Scholars often attribute the rise of desert agriculture to an extended period of relatively wet weather. However, the reasons behind its collapse over the last 1,000 years remain unknown, with climatic, political or cultural changes being suggested as possible causes. ♦ AG

---

**NIMROD WIELER** is a PhD student at the Institute for Desert Research, Ben-Gurion University of the Negev, Israel. His master's degree was on the significance of the geological substrate in runoff agriculture over the last 1,700 years in the Negev Highlands.

**DR RACHEL EINAV** is an ecologist and environmental consultant specialising in marine environments and water systems. [www.blue-ecosystems.com](http://www.blue-ecosystems.com)

## Eden in the East

The Drowned Continent of Southeast Asia

by Stephen Oppenheimer

"We are living in what was known as the cradle of civilisation, which happens to be Southeast Asia, and not, as one might expect, Egypt or Sumer."

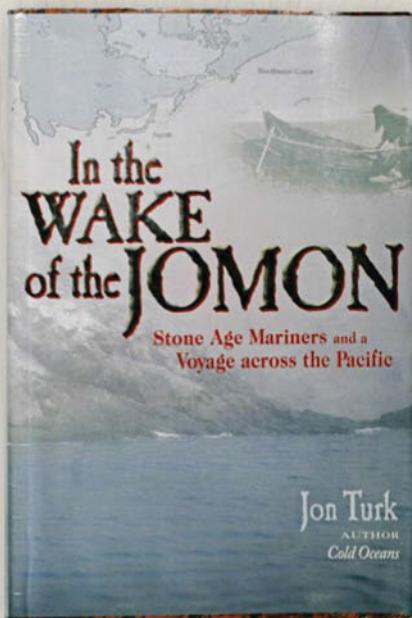
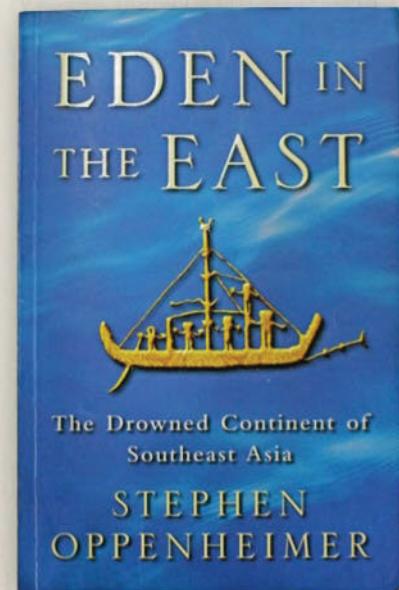
What would your response be to this statement? This assertion may be made with confidence after reading Stephen Oppenheimer's *Eden in the East*, which challenges conventional thinking that civilisation began in the Middle East. And how persuasive he is as he has not only relied on archaeological, geological, cultural and linguistic factors to prove his point, but has reinforced it by bringing in his trump card – genetics. Genetic markers and surveys have raised, for instance, the possibility of a Southeast Asian

Published by  
Weidenfeld & Nicholson, Orion Books (paperback)  
ISBN: 0753806797

genetic intrusion into native northwestern Australian peoples.

Tantalising, indeed, but Oppenheimer doesn't stop at genes. He goes on to explore creation myths, flood myths, fuelled by his experiences as a medical doctor in tropical pediatrics in Papua New Guinea.

He argues most convincingly that a drowned Sundaland – the southeast portion of the Asian continental shelf encompassing the Malay Peninsula as well as Borneo, Java, Sumatra and the surrounding small islands – caused a dispersal of peoples from east to west; their lands flooded at the end of the last Ice Age, and ... well, perhaps it is best to lay your hands on a copy of his work!



## In the Wake of the Jomon

Stone Age Mariners and a Voyage Across the Pacific

by Jon Turk

Published by  
International Marine/Ragged Mountain Press (paperback)  
ISBN: 007147465X

Fascinated with the theory that the Jomons, Stone Age mariners, and ancestors of the Ainu of Japan, migrated from their homes in northern Japan all the way across the Pacific Rim to Alaska, in perhaps nothing more than hollow logs, adventurer and one-time salmon fisherman Jon Turk set off to re-enact their journey.

His account of this 15-month odyssey in a similar, though contemporary, craft (a plastic trimaran) together with the paraphernalia of today's traveller, makes a captivating read, as he battled not only the forces of Nature – ubiquitous storms, a primordial ocean and a baleful bruin – but also the hurdles

of bureaucracy, as well as the foibles of an inept interpreter who couldn't speak English.

Determination, fortitude and an unshakeable faith in his abilities kept him on the track of the able Jomons, the first Stone Age potters, whose traces have long vanished below the waves. His route past the Kurils and volcanic Kamchatka all the way to Alaska also provided him with opportunities to appreciate the hospitality of simple folk living in these isolated outposts. On the way, he becomes acquainted with miniature penguins, enjoys lashings of salmon, and is assisted by nothing less than a Russian army tank!

---

Remnants of the Guge  
Kingdom at the banks of  
Sutlej river, nestled between  
rocky mountains



{ TIBET }

# The Kingdom of Guge

••• *A Lost  
Tibetan  
Civilisation*

◆◆◆ TEXT & PHOTOS  
Amardeep Singh



In the early 1600s, a pair of Jesuit explorers, Father António de Andrade and Manuel Marques, set foot on the sacred land of Tsaparang, establishing the first Catholic mission on Tibetan soil. To get there, they had to first traverse the upper Himalayan mountain ranges before descending into a treacherous valley via the Mana Pass. Little did they know that their exploits would ultimately catalyse the downfall of the grand Guge Kingdom.

**Little** explored by adventurers in the past, Tibet today is strictly controlled by the Chinese government and travel within the region has been restricted ever since the Dalai Lama's flight from Tibet in 1959. Only recently have foreigners been allowed to enter Tibet, but severely restricted travel permits make it practically impossible to explore the area at will. The place famously known as "the roof of the world" remains largely off-limits to even the most intrepid tourists.

Travellers lucky enough to visit Tibet inevitably see little more than the administrative capital, Lhasa. Some venture westward, as far as Mount Kailash, but only the privileged few get to know the area beyond, where the beauty of the barren, craggy mountain landscapes dwells at the remote western border. This is the region of Tsaparang, a place where the ancient kingdom of Guge could once be found.

I came across a mention of this kingdom in 2007 when reading Lama Anagarika Govinda's *The Way of the White Clouds*. His description of the landscape here is forever etched in my mind:



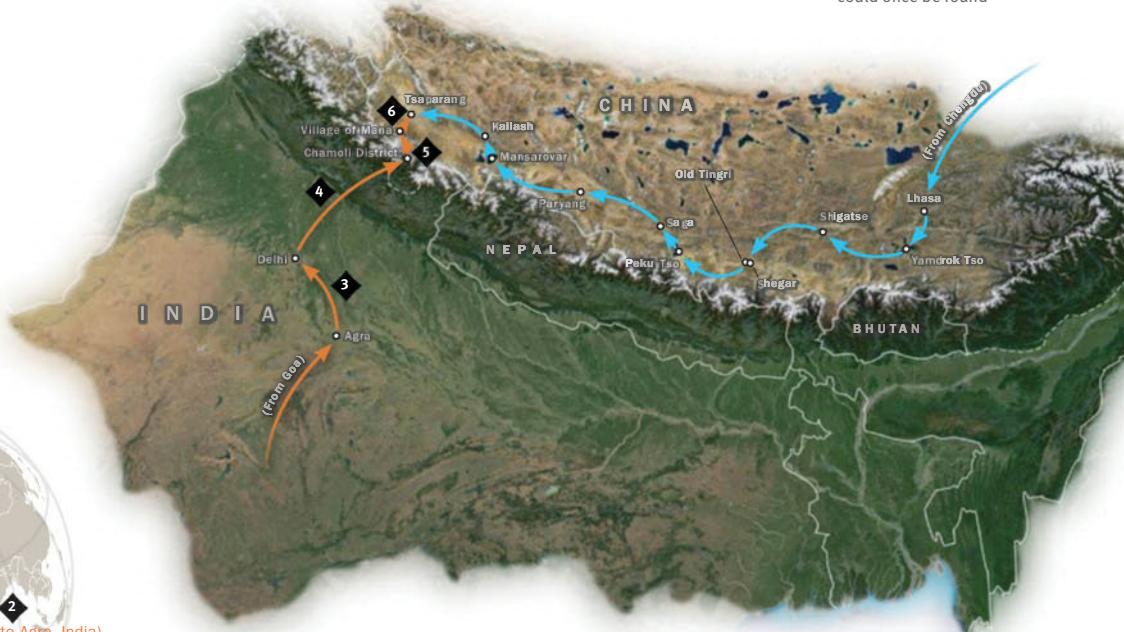
## Tracing ancient and modern-day routes to Guge

From Goa to Guge in the past, the author sets his own path to Guge from Chengdu.

- 1 1600, by ship
- 2 Jan 1624 — Mar 1624, by foot
- 3 Mar 1624 — Mar 1624, by foot
- 4 Apr 1624 — Jun 1624, by caravan
- 5 Jun 1624 — Jul 1624, by foot
- 6 Jul 1624 — Aug 1624, by foot\*

\*see close up route on page 86

**RIGHT** The panoramic view of Tsaparang, the place where the ancient kingdom of Guge could once be found



— The route of the Jesuits  
— The author's route



*“... vivid colours and chiselled forms of rocks and mountains stand out in brilliant clearness, divested of any trace of vegetation, like the world on the first day of creation, when only heaven and earth were facing each other in the primal unity...”*

— Lama Anagarika Govinda,  
from *The Way of the White Clouds*

So strong was my interest in visiting this remote area that in May 2011, I secured a travel permit to drive, with my 18-year-old daughter, the 3,400 kilometres from Lhasa to Tsaparang and back. We flew from Singapore on June 4, 2011, to Chengdu and took a Chinese domestic flight to Lhasa.

After acclimatising for two days in the Tibetan capital, we began our long westward journey by four-wheel drive, taking us through YAMDROK TSO, Shigatse, Shegar, Old Tingri, Saga, Paryang, Mansarovar, Kailash, Peku Tso, and finally to our destination, Tsaparang, centre of the Guge kingdom.

Located in the remote Ngari Prefecture, on the banks of Sutlej river, Tsaparang is a nine-day drive from Lhasa or eight days' travel from Kathmandu or Kashgar (Xinjiang). It isn't far from the picturesque Indian state of Ladakh, and while current political

circumstances prevent access to Tibet from India, a rich trade route between the two neighbours once passed through this region.

It was in the 10th century that Nyi Ma Mgon, one of the great-grandsons of Glang Darma, the last monarch of the Tibetan Empire (Tubo), established the Guge kingdom. He later divided it into three parts – Ladakh, Zanskar and Guge – appointing his three sons as the rulers of the kingdoms. They were ruled independently, but with strong alliances among the brothers.

◆ ◆ ◆  
**...Vasco da Gama, the first European to reach India by sea, opened the floodgates to trade...**

At the beginning of the 16th century, on the distant plains of India, Vasco da Gama, the first European to reach India by sea, opened the floodgates to trade, and the Portuguese quickly established a permanent settlement in Goa, maintaining their rule for some 450 years until the Indian Army took back possession of the territory in 1961. As well as trade, the Portuguese were driven by the desire to spread Christianity in India,



**TOP** The lower levels of the Tsaparang clay tunnels were the residences of common villagers

**TOP RIGHT** Tsaparang: The centre where over a hundred families lived in a layered clay hill



} The final leg of the Jesuits' journey, from the Mana Pass via the Sutlej river, and finally, to Tsaparang

and immediately after establishing their rule, they encouraged Jesuits from Portugal to sail to Goa.

One such Jesuit, António de Andrade, landed in Goa in 1600 to pursue higher religious studies; he was joined by another, Manuel Marques. The Jesuit missionaries of Goa were fascinated by the Himalayan mountain ranges in the north. There existed the belief among the Jesuits that in the upper reaches of the Himalayas lay a place where Jesus lived after his resurrection.

◆ ◆ ◆

**There existed the belief among the Jesuits that in the upper reaches of the Himalayas lay a place where Jesus lived after his resurrection.**

A mission in search of this sacred place was not going to be easy, especially for Jesuit missionaries unaccustomed to such challenging terrain as the Himalayas. But the calling within was strong and Andrade and Marques decided to undertake a pilgrimage to Tibet. In his personal accounts of the journey, *Early Jesuit Travellers in Central Asia*, published in 1626, de Andrade wrote:

*"Immediately beyond this place there rise lofty mountains, behind which lies an awful desert, which is passable only during two months of the year. The journey requires twenty days. As there is an entire*



## REMEMBERING TSAPARANG'S ZENITH

*absence of trees and plants here, there are no human habitations, and the snowfall is almost uninterrupted; there being no fuel, travellers live on roasted barley meal, which they mix with water and drink, taking with them nothing that requires fuel to cook."*

Andrade and Marques arrived in Tsaparang, the capital of the Guge kingdom, in early 1624. Strategically located on the Silk Road, Tsaparang was then a thriving fortress city, but due to its unfertile land, it depended totally on imported food. Many traders bought goods from Central Asia and China, and the king received the Jesuits with immense hospitality, permitting them to set up a small church.

The perceived favouritism towards the Christians was viewed negatively by the Buddhists of Tsaparang, and upon the departure of the Jesuits, the locals cajoled the king of Ladakh to invade, ultimately leading to the demise of the kingdom and leaving behind a mere shell of the once-glorious palace at Tsaparang. The search for the remote Himalayan refuge where Jesus was believed to have reappeared after his resurrection would go down in history as the catalyst that wiped the great Guge kingdom off the face of the Earth. ♦ AG

---

**AMARDEEP SINGH** is an engineer with an MBA from the University of Chicago. His photography can be viewed at [www.amardeepphotography.com](http://www.amardeepphotography.com)

- ◆ 1 The Tsaparang of today gives us clues as to the majesty of past glories: the remains of a huge clay fortress, perched on a pyramid-shaped cliff rising about 150 metres, containing numerous tunnels and caves carved out of the rock. The kingdom's common people occupied the lowest levels, while the level above was for public temples and monks' quarters. At the top, in an open space, stood the royal palace.
- ◆ 2 At the height of the kingdom's existence, it is believed that more than a hundred families lived in Tsaparang's tunnels. One can only wonder about the mechanisms employed to lift water from the Sutlej river to the top of the fortress's clay structures to cater to the needs of these families.
- ◆ 3 While the people of Tsaparang adhered to Tibetan Buddhism, a strong influence of Hinduism ran through its foundations. It was a civilisation open to different belief systems, a fact reflected in the ancient temple murals that bring together Tibetan, Nepali Newari and Indian Kashmiri artistic styles and depict both Hindu Tantric and Buddhist deities. Unfortunately, many of the murals and statues were destroyed during China's Cultural Revolution of 1966.
- ◆ 4 The ruins of Tsaparang have become an impressive reminder of the "Shangri-La" that the kingdom once was.

# A Lifelong Journey

FOLLOWING THE PATH OF THE GREAT ASIAN ELEPHANT

Text Raman Sukumar



**LEFT** Over his long career, Sukumar has been one of the Indian elephant's closest allies

**RIGHT** Cochin, India: Habitat loss, degradation and fragmentation have been the main threats for the Asian elephant, which remains on IUCN's "Endangered" list

**Going well beyond his call of duty as a conservation scientist, Raman Sukumar is the world's foremost expert on the Asian elephant. Nicknamed the Elephant Man, he has spent his entire life eulogising the animal's astounding intelligence and adaptability. He is also the very first Indian to have been awarded the International Cosmos Prize – an accolade recognising outstanding work that promotes the harmonious coexistence between Nature and humankind.**

**Thirty-four** years ago, I was discussing possible topics for my doctoral research with my mentor, Professor Madhav Gadgil, when he mentioned almost casually that no one had studied the ecology of conflicts between elephants and people. That suggestion immediately struck a chord: years ago, the first musical item I had played on a local radio programme that I was compering was my favourite tune “Baby Elephant Walk” from the film *Hatari!*. I was keen to do research on a large mammal, but had it not been for this suggestion, I doubt I would have entered the world of the elephant.

Over the next three years in the early 1980s, I researched the conflict in the Biligirirangans, in southeastern Karnataka, observing elephants, especially males, ravage agricultural crops and recording bulls poached for their precious tusks. I built up a basic

understanding of the animal’s ecology and its interactions with people. It was clear that fragmentation of their habitat increased the chances of elephants accessing cultivated fields. But the tasty and nutritious crops were also an irresistible addiction to some elephants in the population. The ensuing conflict had complex dimensions that had to be resolved if people were to accept elephants in their midst.

Conservation is ultimately the art of making the improbable possible through solutions that ensure the survival of the target species, as well as the welfare of people who share its habitat. In densely populated democratic societies this can be achieved only through a fine balance between a strict “protected area” approach and leaving conservation entirely in the hands of people at large.

Based on recommendations from my doctoral research, the Karnataka

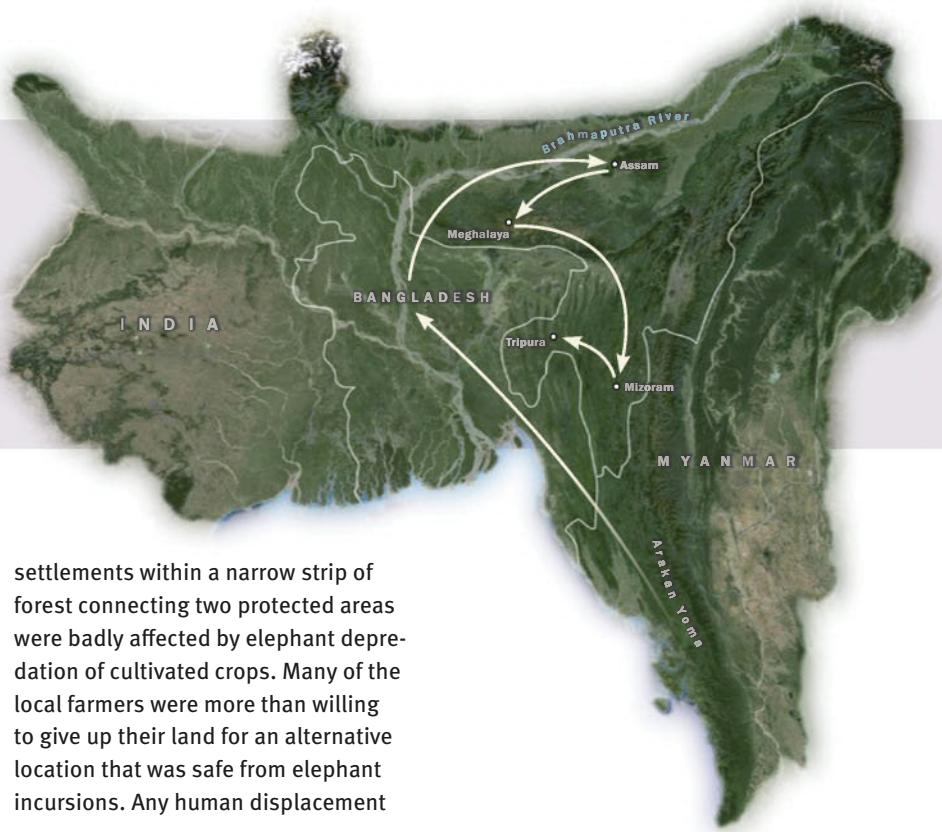
Forest Department extended the boundaries of the Biligiri Rangaswamy Temple Sanctuary to cover a more ecologically rational unit and set up a new sanctuary along the banks of the Cauvery River to protect the elephants’ access to a perennial source of water in an otherwise dry habitat. At the same time, in the mid-1980s I also helped design the country’s biosphere reserve in the Nilgiris, in the westernmost part of Tamil Nadu. It was a concept that aimed to reconcile conservation with development through people’s involvement, an idea that was far ahead of its time in the country.

Early on, I also realised that a long-ranging animal such as the elephant could not be confined to any single protected area, but could only be conserved through managing it across landscapes. When the Indian government invited me to serve on a task force to plan for Project Elephant



## THE ELEPHANT WALK

The Indian elephant journeys 500 kilometres during its yearly migration and devotes three quarters of its life to the search for food, reigning as the farthest travelling land animal in Asia. Herds cover 20 to 30 kilometres a day, never stopping for more than a few days at any one place.



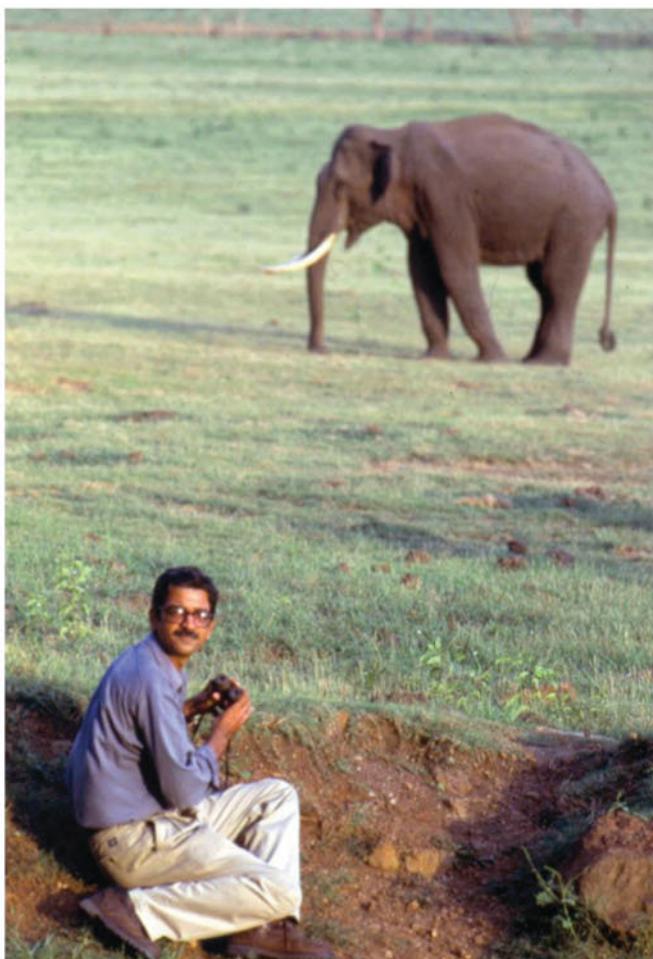
in 1989 – the country's second major flagship conservation programme – I not only gladly agreed, but also used the knowledge accumulated from field work over the previous decade to define elephant reserves or landscapes in southern India. The action plan for Project Elephant provided a very balanced framework for conserving elephants across landscapes, mitigating conflicts and protecting the species from poachers.

It took another 10 years before I could begin doing something practical to secure corridors for elephants in the Nilgiri-Mysore-Wayanad elephant landscape. Working through two conservation NGOs, Asian Nature Conservation Foundation and Wildlife Trust of India, I began the slow and challenging task of strengthening the most critical corridors there.

The first corridor we tackled was in Bandipur National Park, Karnataka, where a very narrow passage was eventually widened in 2002 by the government with funding from Project Elephant. This was possibly the first successful strengthening of an elephant corridor in the country. Next, we addressed a corridor in the same state in which a 10-hectare parcel of uncultivated land in Kollegal Division was purchased through privately raised funding and handed over to the government.

We then turned our attention to a more complex situation in the Brahmagiri range in Kerala. A number of small

settlements within a narrow strip of forest connecting two protected areas were badly affected by elephant depredation of cultivated crops. Many of the local farmers were more than willing to give up their land for an alternative location that was safe from elephant incursions. Any human displacement



has to be approached in a socially sensitive manner. Thus, we offered them two alternatives: either sell us their farmland at market prices or be resettled outside the corridor at a place of their choice and in a house designed and approved by them. The approach proved to be a resounding success.

Since then, we have been experimenting with other alternatives, such as community management of lands to allow the passage of elephants in northeastern India. Perhaps these conservation initiatives have given me the greatest satisfaction, as we have demonstrated that you can bring about change for the better in a socially responsible manner.

Conservation invariably brings many legal dimensions into the picture. Most recently, I had the privilege of chairing an expert group at the behest of the High Court of Karnataka to provide a holistic framework for the conservation of the elephant in the state. The technical recommendations of our group have been largely accepted by the government and the court. I believe that our framework has useful lessons for elephant landscapes in other parts of the country.

The little conservation work that I have indulged in has not precluded me from pursuing my passion for elephant science. With a wonderful team of students, researchers and veterinarians, I have been able to radio-collar elephants to track their movements and understand their habitat requirements, reconstruct the evolutionary history of the species using advances molecular methods, mathematically model the dynamics of elephant populations, record the language of their vocalisation, and observe their reproductive behaviour and strategies in the wild.

In all of this, there has been nothing more exhilarating than quietly observing the life of an elephant herd at a water hole, as its members, young and old, went about their natural



**LEFT** Bandhavgarh National Park, Umaria, India: Journeying the farthest distance over a lifetime, the Indian elephant has far to go before the long-term future of the species can be secured

**BOTTOM LEFT** A young scientist in the field: Sukumar is one of the few who has accumulated years studying and surveying elephants in the wild

business of feeding, drinking, bathing, socialising and vocalising. My work with elephants has also led me into other fields of research, such as tropical forest dynamics – which is heavily influenced by the elephant – and strangely, into climate change as well.

One of my most enjoyable and educational pursuits was my recent book on the cultural history of elephants from ancient times to the present, a history that illuminates the close relationship between elephants and people in Asia since the third millennium BC. This project provided me valuable perspectives on how the elephant has been viewed through the ages.

My journey into the world of the elephant is far from complete. There is still much to be learnt about the wild elephant, and much to be done for them in the wild and in captivity. One question that people often ask

me is: Do elephants have a future in Asia? I am personally optimistic that the Asian elephant will continue to persist in the coming decades and centuries in places such as southern India and Sri Lanka, and hopefully elsewhere on the continent. The elephant is a wonderfully adaptable creature that needs only a little help from us to survive. ♦AG

---

**RAMAN SUKUMAR** has studied the Asian elephant for more than 30 years. At the age of 15, he became interested in conservation science and went on to join the faculty of the Centre for Ecological Sciences at the Indian Institute of Science. In 1977, he established the Asian Nature Conservation Fund, which continues to support the conservation of biological diversity in India. In 2003, he received the Whitley Gold Award for International Nature Conservation. He currently serves as Professor and Chair at the Centre for Ecological Sciences, Indian Institute of Science, Bangalore.

# SUBSCRIBE TODAY

And be part of the **ASIAN Geographic SOCIETY**  
ONE ASIA ONE HEART

[asiangeo.com](http://asiangeo.com)



Asian Geographic PASSPORT

# ASIAN Geographic

ASIA WITHOUT BORDERS

ASIAN Geographic has a consistent editorial focus aimed at showcasing the best of Asia to the world. From culture and heritage to environmental issues and social trends, we are proud to bring you Asia in all its beauty and complexity.

# ASIAN Geographic

passport

TRAVEL WITHOUT BORDERS

AG PASSPORT magazine is now incorporated into the flagship title, ASIAN Geographic. While bound together, AG PASSPORT will continue to maintain its own identity, giving readers a new approach to travel appreciation.

AG		6 issues/year + Collector's Edition + Special Travel Edition	
SINGAPORE	<input type="checkbox"/> S\$48	BRUNEI • INDIA • INDONESIA • HK •	<input type="checkbox"/> A\$55
	<input type="checkbox"/> S\$80	PHILIPPINES • TAIWAN • THAILAND	<input type="checkbox"/> A\$95
<b>MALAYSIA</b>		<input type="checkbox"/> 1YR S\$55	<input type="checkbox"/> 2YR S\$95
		<input type="checkbox"/> OTHER PARTS OF ASIA	<input type="checkbox"/> US\$48
			<input type="checkbox"/> US\$70

BI-MONTHLY		AG 1	AG 2	AG 3	AG 4	AG 5	AG 6	passport
(On Newsstands) >		JAN 1	MAR 1	MAY 1	JUL 1	SEP 1	NOV 1	
		+ 1 JUN Collector's Edition		+ 1 DEC Special Travel Edition				

Our publications are also available as eMagazines!

[asiangeo.com/THEREAD](http://asiangeo.com/THEREAD)



# ASIAN Geographic

THE READ

YOU ARE WHAT YOU READ

AG THE READ is a breezy and informative publication that focuses on complementing the school curriculum and student learning. It will make learning fun, highlighting fascinating aspects across a variety of subjects.

### AG THE READ

6 issues/year

#### SINGAPORE/MALAYSIA

- S\$32
- S\$55

#### AUSTRALIA

- A\$55
- A\$95

#### OUTSIDE ASIA

- US\$48
- US\$85

#### BRUNEI • INDIA • INDONESIA • HK • PHILIPPINES • TAIWAN • THAILAND

- 1YR S\$36
- 2YR S\$60

#### BI-MONTHLY

(On Newsstands) > JAN 1 MAR 1 MAY 1 JUL 1 SEP 1 NOV 1

#### BI-MONTHLY

(On Newsstands) > FEB 1 APR 1 JUN 1 AUG 1 OCT 1 DEC 1

To further enhance your knowledge of Asia in a fun and informative, yet engaging way, pick up AG THE BIG READ for topics that include Careers, Culture, Lifestyle, Current Affairs, Sports, Travel, Wellness and Grooming.

### AG THE BIG READ

Add 6 issues/year for

#### SINGAPORE/MALAYSIA

- \$10
- \$20

#### OTHER PARTS OF ASIA

- 1YR US\$35
- 2YR US\$55



NO MEMBERSHIP FEE is required. Subscribe to *ASIAN Geographic* and automatically become a member. A total of S\$2 from every subscription will go to the Asian Geographic SOCIETY – a non-profit scientific and educational society dedicated to the promotion and conservation of Asia's environment, culture and wildlife. [www.AsianGeographic.org](http://www.AsianGeographic.org)

[asiangoeo.com/JUNIOR](http://asiangoeo.com/JUNIOR)



**AG JUNIOR** is a magazine for youngsters growing up in Asia. This bi-monthly magazine is the only magazine that showcases Asia and opens an infinite world of possibilities for all children aged 7 to 13. The supporters of the magazine, however, are the parents who always welcome new ideas and activities that will keep their children occupied and stimulated.

#### **AG JUNIOR** 6 issues/year

SINGAPORE	BRUNEI • INDIA • INDONESIA • HK • PHILIPPINES • TAIWAN • THAILAND
<input type="checkbox"/> S\$28	<input type="checkbox"/> A\$30
<input checked="" type="checkbox"/> S\$45	<input type="checkbox"/> S\$30 <input checked="" type="checkbox"/> S\$50
MALAYSIA	OTHER PARTS OF ASIA
<input type="checkbox"/> S\$28	<input type="checkbox"/> US\$30
<input checked="" type="checkbox"/> S\$45	<input type="checkbox"/> US\$50

AUSTRALIA
<input type="checkbox"/> A\$30
<input checked="" type="checkbox"/> A\$50
OUTSIDE ASIA
<input type="checkbox"/> US\$30
<input checked="" type="checkbox"/> US\$50

BI-MONTHLY	AGJ 1	AGJ 2	AGJ 3	AGJ 4	AGJ 5	AGJ 6
(On Newsstands) >	JAN 1	MAR 1	MAY 1	JUL 1	SEP 1	NOV 1

## SUBSCRIPTION

[asiangoeo.com](http://asiangoeo.com)

### ASIAN GEOGRAPHIC

1YR     2YR

S\$/US\$/A\$ \_\_\_\_\_

### AG JUNIOR

1YR     2YR

S\$/US\$/A\$ \_\_\_\_\_

### AG THE READ

1YR     2YR

S\$/US\$/A\$ \_\_\_\_\_

### AG THE BIG READ

1YR     2YR

S\$/US\$/A\$ \_\_\_\_\_

New subscriber     Renewal     Gift for \_\_\_\_\_

Add the digital edition for:     1-YEAR (US\$5)     2-YEAR (US\$10)

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

EMAIL \_\_\_\_\_

TEL \_\_\_\_\_

PAYMENT

**CREDIT CARD** Credit card payments will be processed in S\$

VISA     MASTERCARD     AMEX

Card No. \_\_\_\_\_

Expiry date \_\_\_\_\_

CVV No. \_\_\_\_\_ Signature \_\_\_\_\_

OR

**CHEQUE** Only S\$ cheques are accepted

Bank \_\_\_\_\_ Cheque No. \_\_\_\_\_

My Cheque/Bank Draft for S\$ \_\_\_\_\_ is enclosed, payable to  
Asian Geographic Magazines Pte Ltd

Send this form to:

Asian Geographic Magazines Pte Ltd,  
20 Bedok South Road, Singapore 469277

Or fax to:

+**(65) 6291 2068**

#### Terms & Conditions

All promotions are valid for a limited period only and/or while stocks last. Please allow 4-6 weeks for delivery of the first issue. An acknowledgement letter will be sent to you either by email or post. All subscriptions are non-refundable upon receipt. No official receipt will be issued for payment by cheque/credit card. You will be notified if you have won a prize. Cheque and/or bank draft should be made payable to "Asian Geographic Magazines Pte Ltd" in Singapore Dollars and only Singapore (\$\$) cheques are acceptable. All credit card payments will be processed in Singapore Dollars (\$\$). For enquiries, please call our customer service at

Tel: +**(65) 6298 3241** or Fax: +**(65) 6291 2068** or Email: [sub@asiangoeo.com](mailto:sub@asiangoeo.com)

### THE PLEASURE OF PRINT

Print subscribers of *ASIAN Geographic* will continue to receive *Asian Geographic PASSPORT* for free in 2014. This includes the 6 bimonthly issues, plus one special edition of *ASIAN Geographic* and one special travel edition of *Asian Geographic PASSPORT*.



[www.goo.gl/FCmsou](http://www.goo.gl/FCmsou)

### PASSPORT'S OWN, ONLINE

Subscribers to *ASIAN Geographic* eMagazine will no longer receive *Asian Geographic PASSPORT*.

The good news is, *Asian Geographic PASSPORT* will be a standalone eMagazine at only US\$5.99 for 6 issues, plus one special travel edition in 2014.



[www.goo.gl/WfMVM7](http://www.goo.gl/WfMVM7)

MORE  
GOOD NEWS!  
*ASIAN Geographic*  
eMagazine is now at  
only US\$3.99!  
(U.P. US\$19.99)



1 JAN  
ISSUE 1

1 MAR  
ISSUE 2

1 MAY  
ISSUE 3

1 JUN  
COLLECTOR'S  
EDITION

1 JUL  
ISSUE 4

1 SEP  
ISSUE 5

1 NOV  
ISSUE 6

1 DEC  
SPECIAL  
TRAVEL  
EDITION

ASIAN  
Geographic

### UNESCO WORLD HERITAGE SITES ASIA

This issue celebrates some of the world's oldest and most unique of places considered exclusive and exceptionally distinctive.

ASIAN  
Geographic  
passport

### NOOKS & CRANNIES: TRAVEL GUIDE 2015

This edition gives you more of Asia's unique destinations looked at in unique ways.

*ASIAN Geographic* can be found onboard and for your reading pleasure at:



### NEWSSTAND DISTRIBUTION

*ASIAN Geographic* can be found in the following countries. If you have difficulty finding us on newsstands, please contact our distributors: AUSTRALIA Gordon & Gotch Australia Pty Ltd; ABU DHABI, BAHRAIN, CYPRUS, DUBAI, JORDAN, KUWAIT, LEBANON, TURKEY Levant; BRAZIL Euromag; CANADA LMPI; CHINA AND HONG KONG Times Publishing (HK) Ltd; INDIA India Book House Pte Ltd; JAPAN DIP; INDONESIA Java Books; PHILIPPINES Asia/Pacific Circulation Exponents Inc; MALAYSIA Pansing Marketing Sdn Bhd; MAURITIUS IPBD, Responsible Commerciale I.P.B.D. Ltd Curepipe ILE MAURICE; NEW ZEALAND Gordon & Gotch NZ; SINGAPORE Singapore Press Holdings Ltd; SOUTH AFRICA Magscene; TAIWAN Formosan Magazine Press Inc; TAHITI Agence Polynésienne de Diffusion; THAILAND Asia Books Co Ltd; USA Source Interlink

### MEDIA CORRESPONDENTS

#### ASIA

INDIA, SRI LANKA RMA Media, Fareedoon KUKA • [india@AsianGeo.com](mailto:india@AsianGeo.com)  
NEPAL, BANGLADESH Media South Asia (P) Ltd • [nepal@AsianGeo.com](mailto:nepal@AsianGeo.com)  
MALAYSIA Radius • [malaysia@AsianGeo.com](mailto:malaysia@AsianGeo.com)

Kennedy THALAYAN • [thayalan@asiaevents.com.my](mailto:thayalan@asiaevents.com.my)

THAILAND Radius • [thailand@AsianGeo.com](mailto:thailand@AsianGeo.com)

AUSTRALIA Publicitas Australia Pty Ltd, Charlton D'Silva • [cdisilva@publicitas.com](mailto:cdisilva@publicitas.com)

CHINA Hainan Periscope Social Media Company • [china@AsianGeo.com](mailto:china@AsianGeo.com)

JAPAN Keiichi ARANTANI • [japan@AsianGeo.com](mailto:japan@AsianGeo.com)

RUSSIA Andrey BIZYUKIN • [russia@AsianGeo.com](mailto:russia@AsianGeo.com)

AUSTRALIA Publicitas Australia Pty Ltd • [australia@AsianGeo.com](mailto:australia@AsianGeo.com)

GERMANY, SWITZERLAND, AUSTRIA IMV Internationale Medien Vermarktung • [germany@AsianGeo.com](mailto:germany@AsianGeo.com)

SWEDEN, NORWAY, FINLAND, DENMARK, ICELAND M&M International Media AB • [sweden@AsianGeo.com](mailto:sweden@AsianGeo.com)

NORTH AMERICA Matt WEISS • [america@AsianGeo.com](mailto:america@AsianGeo.com)

### OTHER ASIAN GEOGRAPHIC MAGAZINES PTE LTD PUBLICATIONS:



*ASIAN Geographic* is published every 45 days by Asian Geographic Magazines Pte Ltd 20 Bedok South Road, Singapore 469277 • SINGAPORE Tel: +(65) 6298 3241 Fax: +(65) 6291 2068 • AUSTRALIA – Tel: (1 800) 219 703 (Toll Free) • Email: [info@AsianGeo.com](mailto:info@AsianGeo.com)

PRINTED IN SINGAPORE BY KHL PRINTING CO PTE LTD



# Trailing Tea

AN ANCIENT THOROUGHFARE

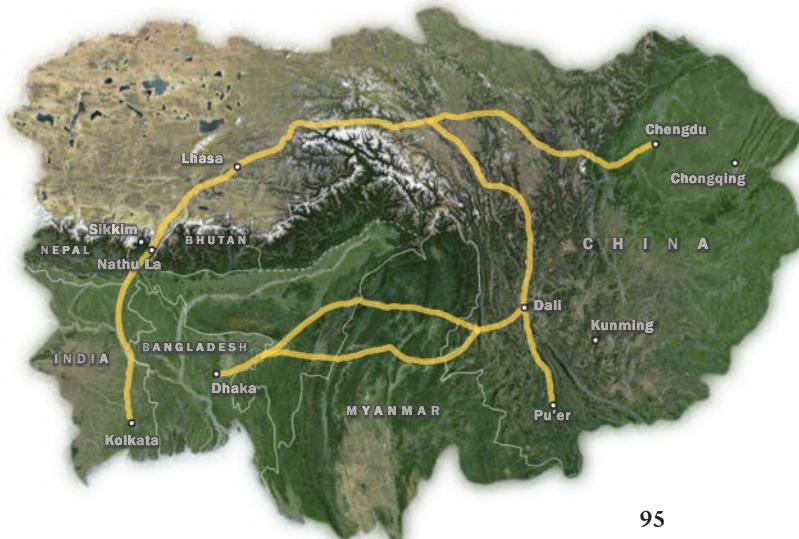
**Cha** Ma Gu Dao, or the Tea Horse Road, was first documented during the Tang Dynasty (618–907) and got its name during the Song Dynasty (960–1279). However, verbal history passed down by ethnic minorities and evidence from the *Book of Han* — a classical Chinese history completed in 111 AD — show interaction between Yunnan Province, where this ancient tea route is situated, and the rest of the world dating back to the second century BC.

When Emperor Wu (r. 141–87 BC) of the Han Dynasty was laying plans to develop southwestern China (present-day Yunnan, Guizhou, Sichuan and Guangxi) to create a passage to India, an ancient channel linking to Yunnan was discovered, possibly dug as early as the fourth century BC.

In the trail's heyday, traders endured the harsh mountainous conditions for months at a time, trudging thousands of kilometres from southern Yunnan

through the Yangtze River and up to the Tibetan Plateau. The trail also led to India and Southeast Asia through Myanmar, and tea was smuggled and replanted in northwestern Myanmar and areas around Assam. The route came down from Tibet through the Jelep and Nathu passes to Gangtok in Sikkim and Kalimpong in West Bengal. However, modernisation cruelly erased most of the original Tea Horse Road from the map, leaving remnants of this once illustrious trade route for memory's sake.

Today, China intends to study the ancient road link that used to connect Jessore, Bangladesh to Yunnan and revive it through the development of a Bangladesh-China-India-Myanmar economic corridor along the same path. Apart from boosting trade and bolstering future plans for a railway link, the project will also breathe life into this legendary passageway once again. ♦AG



# Over the Silk Horizon

TRAVERSING FABLED CITIES, LEGENDARY MONUMENTS AND EXCEPTIONAL EMPIRES

ICONIC MONUMENTS ALONG THE WORLD'S GREATEST TRADE ROUTE



**Silk** and fabrics from China and India were not the only commodities that travelled the historical Silk Road. Extending about 6,500 kilometres, this network of trade routes came into being during the Han Dynasty (206

BC–220 AD) and had expanded greatly by 114 BC. Starting from the ancient Chang'an (present-day Xi'an), China, it stretched all through Asia, some parts of Africa and island countries, ending in India, Persia, Java and

Rome. Over the course of its 3,000-year existence, the Silk Road gave rise to a wide exchange of luxury goods, art, knowledge and technological innovation – as well as the spread of the infamous Black Plague. ♦AG



Get on a camel

Get on a time machine

Find what you seek  
**Incredible India**

India Tourism Singapore, #01-01 United House, 20 Kramat Lane, Singapore 228773  
Phone: (65) 6235 3800 • Fax: (65) 6235 8677 • Email: info@indiatourism.com.sg

Camel Caravan in Jodhpur, Rajasthan  
To know more, log on to [www.incredibleindia.org](http://www.incredibleindia.org)

*With the tourist visa-on-arrival facility for citizens of Cambodia, Indonesia, Lao PDR, Myanmar, Philippines, Singapore and Vietnam, India is now so close to home. Be there to discover the charms of Incredible India.*



**T**   
**TISSOT**  
SWISS WATCHES SINCE 1853  
INNOVATORS BY TRADITION

Experience more at [www.t-touch.com](http://www.t-touch.com)



## **TOUCH EXPERT™**

### **TACTILE TECHNOLOGY**

chosen by Huang Xiaoming – Actor

Touch the screen to get the ultimate sports watch experience with **15 functions** including **meteo, altimeter and compass**.

---

**IN TOUCH WITH YOUR TIME**



meteo



4478m



compass

**TISSOT BOUTIQUES** • Marina Square Shopping Centre, Tel: 6336 9757 • Raffles City Shopping Centre, Tel: 6338 2829

• Suntec City, Tel: 6338 4550 • The Shoppes at Marina Bay Sands, Tel: 6688 7348 • Wisma Atria, Tel: 6836 9659

**CUSTOMER SERVICE CENTRE** Keppel Bay Tower, #06-01/02 Tel: 6275 6388