

Formosan Serow

• Chao, Ming-Chieh •

Formosan Serow is a national treasure and the only bovid species native to Taiwan. It is reddish brown to black in fur, brownish yellow at the jaw, throat and the front of neck, and no mane present on the nape of its neck. It is also called the Taiwan Serow by some authorities.

Due to habitat destruction and harvesting, the numbers of wild Serow herds have dwindled sharply and are practically extinct in certain low-to-middle altitude areas, making their protection evermore critical. It is listed as a "Precious and Rare Species" by the Council of Agriculture since 1990. The Taipei Zoo has a designated an exhibition inside the Formosan Animal Area, as well as a huge enclosure in the secondary forests on the

hill behind as a breeding farm, for the Zoo has listed the Formosan Serow as one of the key animals on its breeding programs, even formed a team specially for propagation purposes.

The Taipei Zoo has a few goals: one to build a genetic record maintaining at least 90% genetic diversity after 100 hundred years; the other is to repopulate these animals for example back to habitats previously populated but number has since dwindled across the island. To make these goals become a reality, the Zoo has began collecting samples of hair, stool and blood, both in the wild and within the zoo compound, to be used as reference in the future.



Do, the Baby Formosan Serow

• Yu, Jane-Fang •

Forty-one Formosan Serows, the so-called national treasure that's under conservation, live here at the Taipei Zoo presently. With an annual birth rate of at least 5 additions, it's hard to imagine the number of these animals in the wild is merely a small handful left. It's been about ten years since the Rescue Centre in Taipei Zoo first opened, and in the beginning we hardly charted any wild Formosan Serow medically, but things changed in recent years... let's meet Do, the baby Formosan Serow, and learn about his story.

Do came when he was about 1 month old. He only weighed 5.5 kg (adult can reach 20

kg in captivity), but already weaned enough to eat mulberry leaves and pellet feed. He looked so forlorn and small on that first day. The vet in charge made him a bottle for he wasn't eating well, but Do only suckled a little bit; he was not used to drinking from a bottle. Next day however his spirit returned. Feeling hungry, Do dug into his food and fresh mulberry leaves our colleagues brought with gusto. "Do is Taipei Zoo's first contributor to increase our reproductive gene bank, he is super special and we have to take really good care of him!"

Of course Do did not let us down. After passing quarantine with flying colors he



moved to the Formosan Animal Area, where he lives happily today with his harem of wives, a grandpa many times over! Because he was brought up by man and had constant contact with people Do is the only one out of all Formosan Serows not afraid of humans, he even allows his keeper to pet him. He often reclines on the rock nearest to the entrance with his family waiting for the keeper to come. Can you tell why he is the most popular Formosan Serow we have here?

Routine Caretaking of Formosan Serow

What do Formosan Serows eat? And why is there a rocky slope in the Formosan Serow Exhibition?

• Huang, Shu-Guann •

You see, the Formosan Serows inhabit steep, rugged rock faces of Taiwan's mountains, and as the food supplies at those altitudes are scarce these mountain goats have adopted a feeding pattern of foraging or browsing on juvenile parts of alpine plants, eating even tree barks. Currently at the Taipei Zoo their main diet consists of four plants: mulberry, tremula, paper mulberry and macaranga; carrot slivers, sweet potato slivers, and pellets are added as extra supplements.

However, as these mountain goats prefer to forage, therefore in order for them to get different nutrients from different plants, the keepers go around the zoo grounds to pick different plants for them from time-to-time. The food plants they like include alpinia, banyan and the ivy.

The reason why the exhibition has a rocky slope design is to simulate an alpine precipice environment for them to move about. We hang their food high above, purposely "making it hard" for these mountain goats to reach the fresh leaves and branches, is one of the enrichments designed to enrich their behaviors. Next time you come to the zoo, take a moment to check out what great climbers these Formosan Serows really are.

Children's Nature Exploration Science Camp

• Wu, I-Hsin •

Field observation and scientific note keeping are the basic skills for anyone doing ecological and biodiversity researches. Which is why kids learning how to do explorations and keep science records are important for environmental education. "Hands-on"

learning through actual field studies and live-experience courses interests both the student and the instructor and enriches their takeaways. This year, the year for compassion and caring, the educational team of Taipei Zoo Insectarium therefore availed a series of popular science activities, one of which was the "Nature Exploration Science Camp", a learning program held across Taiwan's remote areas specifically for underprivileged children.

Every kid in the camp was enthralled and amazed by the course content and

materials. Some found leaf insect and stick insect fascinating, seeing them for the first time. Some found the insects taught in class familiar, "we've seen them! They are everywhere, down by the river or in the field, we didn't know they had names!"

The kids were incredibly creative when it came to plant specimens, some made butterfly models; some had grassland ecosystem; some did portraits of themselves! This was the first time many students got to use pliers and films too. We were delighted that this camp improved the kids' knowledge about common species and taught them practical skills and creative arts as well.

Bovines of Taiwan

• Lin, Der-Yuh •

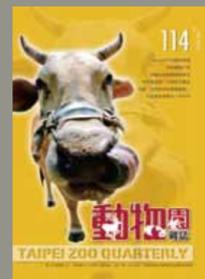
Taiwan mostly had aurochs and water buffalos in the past. Historic records showed although cattle were introduced as early as in the Qin Dynasty, their numbers did not increase significantly until late Ming or early Qing. Documents revealed that the aurochs appeared first, about 400 years ago, and then followed by water buffalos no more 100 years later. The water buffalos were originally introduced by the Dutch during their occupation of Taiwan from Java. Later on, when the focus shifted to farming in Taiwan, more of these animals were brought in from South China to help local farmers with their daily chores. The water buffalos were trained and used for heavy labor until as recent as 1960 or 1970. Holsteins came after Restoration; today, they are the only breed for dairy production in Taiwan

Taiwan's industrial composition changed sharply after 1960. Modern agriculture became mechanized. As a result farmers started to cutback the number of domestic aurochs and water buffalos they kept, to the point of near extinction. The government has since implemented a conservation program in 1987, aimed at promoting the utilization and sustainable development of these animals



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抱動物園報



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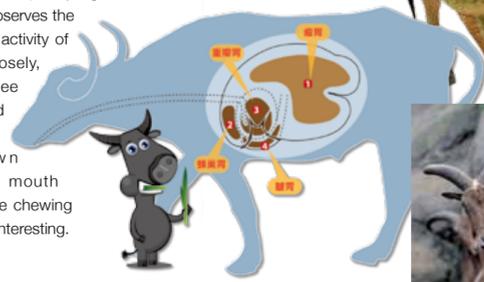
Special Exhibition of Family Bovidae

• Tang, Hsin-Chieh •

Bovid species are largely herbivorous grazers and browsers. Their elongated necks and agile tongues allow them to feed on foliage with ease. In nature, many animals avoid predation by fast eating then move to another safer location to finish digestion. Overtime this act evolved to a digestive behavior known as "rumination"

A cow's stomach is divided into four chambers. "Rumination" is the digestion process where grass after ingestion goes to the first chamber (rumen) for micro-organisms to begin fermentation and breakdown then regurgitates back to the mouth to be re-chewed and re-swallowed. This process is repeated through the second stomach chamber (reticulum), the third chamber (omasum) then the fourth chamber (abomasum), until the food is completely digested.

If one observes the ruminating activity of a bovid closely, one can see the food moving up-and-down its throat, mouth working like chewing gum, very interesting.



Talk About Cow at the Year of the Ox

• Wang, Fu-Yang •

January 26, 2009 was when we sent off the Rat and ushered-in the cow. Since this is the Year of the Ox, let's take a look of a few commonly used idioms involving this animal.

- ◎Play music before the cow: a wasted effort, with a hint of degradation
- ◎One hair from nine oxen: a drop in the bucket, meaning very insignificant
- ◎Crawl through the tip of a cow's horn: hair-splitting, making unnecessary petty distinctions or quibbles.
- ◎As many as the hairs on an ox: countless, innumerable



Introduction to Bovids

• Chen, Szu-Lung •



In animal taxonomy the Bovidae, class Mammalia, order Artiodactyla, is a family of ungulates with the most species and the most diverse members. It is represented by 143 recent species in 49 genera and eight subfamilies, making up 59.6% of all cloven-hoofed animals. It is also the most widespread, native to all continents except Oceania and Central/South Americas.

The Bovidae originated in Africa some 190 million years ago, with all eight of its subfamilies distributed throughout the African continent. Of the eight subfamilies, Antilopinae is the largest with 38 species, accounting to 26% of all bovid species. Bovids are the most important herbivorous animals to Africa, both in species and in quantity. They are also the main source of food for large carnivores.

With except to the four-horned antelope, bovid species are characterized by the one pair of "hollow horns" on their heads, which are unbranched and are never shed. Current studies suggested that horns are largely used by males to fight for dominance, and the different shapes are related to fighting behaviors.

How Do We Love Earth? Let Kids Count the Ways

• Chen, Hsiang-Yin · Lin, Chun-Lan •

April 22 World Earth day, a global environmental-protection movement that was founded in the United States and first celebrated on that date in 1970, is a day designed to inspire awareness and sustainable appreciation for the Earth's environment.

Following the rapid development of modern industries, environmental concerns have come forefront generating attentions from all governments. A total of 141 nations participated in this movement in 1990, lifting the status of environmental issues onto the world stage, and paved the way for United Nations to convene the first Conference on Environment and Development in Rio de Janeiro in 1992, where representatives addressed topics such as climate change

and the extinction of species, and prompted establishments of official environmental organizations.

Taipei Zoo, an eco-classroom where nature is experienced first hand and cherish our beloved natural environment is championed, routinely holds "Happy Kids, Care for the Underprivileged", a series of thematic educational events coinciding with

the celebration of Children's Day every April. In 2008, the first "How Do I Love Earth", a children's drawing contest where primary school students were invited to enter their artworks created base on their personal experiences, was a life education activity geared to inspire children to be more aware of nature, and drive home the message of environmental preservation.

The second year in 2009 the theme was "Small Things in Life, Big Things on Earth", aimed at helping children to be more specific about the little things they do to protect the environment, i.e. walk more and ride less, ride mass transit, bring-your-own reusable dining utensils and shopping bags, save and recycling water, switch off lights, trash classification, etc.

