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In-house newsletter of the SEAFDEC Aquaculture Department, Tigbauan, Iloilo

AQD hosts back-to-back SEAFDEC meetings



his year's 30th Program Committee Meeting (PCM) was held back-to-back with the 10th ASEAN-SEAFDEC Fisheries Consultative Group (FCG) Meeting at the Amigo Terrace Hotel in Iloilo City from November 26-30.

Forty-seven representatives from the ASEAN and SEAFDEC Member Countries (except Lao PDR) as well as the SEAFDEC Departments and the Secretariat attended.

The 30th PCM reviewed the results of programs implementated in 2007 and endorsed the proposed programs for 2008. It also deliberated and adopted the establishment of the Regional Scientific Advisory Committee (RSAC) for Fisheries Management in Southeast Asia.

Similarly, the 10th FCG Meeting discussed the follow-up actions to the directives given during the last meeting of the SEAFDEC Council and the ASEAN Sectoral Working Group on Fisheries. It also reviewed and endorsed the progress and achievements of programs under the FCG Mechanism in 2007 and the proposed programs for 2008.

Other issues discussed were the status of the ASEAN-SEAFDEC Strategic Partnerships, the progress in the implementation of the Code of Conduct for Responsible Fisheries, the initiatives of SEAFDEC on international fisheriesrelated issues and the progress and policy recommendations derived from the implementation of the 2-year program on Sustainable Fisheries Development in the BIMP-EAGA (Brunei Darussalam-Indonesia-Malaysia-Philippines-East Asia Growth Area) Region with support from the ASEAN Foundation.

Apart from the meetings, the participants had the opportunity to tour AQD's Tigbauan Main Station. Dr. Evelyn de Jesus- Ayson, Research Division Head, briefed the visiting group. Dr. Joebert Toledo, AQD Chief, was also on hand.

FCG cites AQD's achievements and contributions in SEA.

Much is expected from aquaculture in terms of addressing the region's food security agenda. AQD, has, for several years, been assisting the Member Countries achieve their Millennium Development Goals through responsible aquaculture. AQD's main contributions in the region are the science-based technologies for breeding, seed production and growout rearing of fishes, shrimps, mud crabs. mollusks, and seaweeds.

A video recently prepared by the AQD's Training and Information Division entitled "AQD Magic" which documents the contributions of the Department over the years, was presented at the November 30 Plenary Session of the 10th FCG Meeting. Delegates viewed





the 8-minute video and had a glimpse of what AQD is all about.

The Meeting expressed appreciation to AQD for its

achievements and the many significant contributions for development of sustainable aquaculture in

the region. Congratulations were extended to all AQD staff for their laudable efforts.

- By BELEN ACOSTA



Gentlemen on the left (from left): Dr. AC Emata, Mr. Nguyen (also at the grouper hatchery below, right), Dr. JD Toledo, Dr. H Ogata, Dr. Nanami, Dr. Yamada, Dr. Yoseda; Dr. Ogata gives a brief on GOJ-TF; Dr. Emata and Dr. Jurgenne Primavera seek clarification



Stock enhancement and aquaculture discussed

quaculture and stock enhancement can help countries achieve food security and sustainability," said Dr. Hiroshi Ogata, Deputy Chief and Manager of the Goverment of Japan Trust Fund (GOJ-TF) at AQD, as he welcomed participants to the Seminar-workshop on stock enhancement and aquaculture of tropical species.

"There is, however, a lot more work that still needs to be done," AOD Chief Dr. Joebert Toledo added. He summarized these as: (1) studies on the retrieval and behavioral aspects of the species to be released; (2) studies on the genetic biodiversity and reduction of reproductive capability of species once released; (3) economics; and (4)involvement of communities and other partners on stock enhancement. The workshop was held November 22 at AOD's main station in Iloilo, and was supported by the Fisheries Research Agency of Japan, Research Institute for Aquaculture

No. 3 (RIA3) of Vietnam;

SEAFDEC Technical Supporting Group in Japan; and the GOJ-Trust Fund at AQD.

The first session on fishes started with the presentation of AQD's Dr. Evelyn Grace DJ Ayson on the *Marine fish seed* production technologies developed at AQD.

She was followed by Dr. Josefa Tan-Fermin who talked on seahorses.

Dr. Kenzo Yoseda of the Ishigaki Tropical Station, Seika National Fisheries Research Institute of Japan was next. He introduced the ongoing projects at his station and a case study on improving larval survival of groupers. Dr. Yoseda's

colleagues, Dr. Hideaki Yamada and Dr. Atsushi Nanami , then discussed approaches to effective stocking based on survival data of the black-spot turkfish *Choerodon shoenleinlii* (Labridae). Former AOD

researchers also made presentations: Dr. Arnil Emata, now a milkfish consultant at BFAR, talked on breeding the mangrove red snapper; while Mr. Denny Chavez , now with INVE Asia Services, discussed rabbitfish.

The second session on crustaceans, mollusks and echinoderms had the following speakers from AQD: (1) Dr. Emilia Quinitio on Advances and constraints in mud crab aquaculture; (2) Dr. Ma. Junemie Hazel Lebata-Ramos on Stock enhancement of mud crabs; (3) Dr. Dolores Parado-Estepa on Aquaculture of tiger shrimp in the Philippines; (4) Dr. Ma. Rowena Romana-Eguia on Freshwater prawn research at AQD; and (5) Mr. Armando Fermin on Donkey's ear abalone hatchery, aquaculture and searanching.

Mr. Nguyen Dinh Quang Duy, Deputy Chief of RIA-3 in Vietnam, lastly spoke on the *Status of sandfish* Holothuria scabra *culture in Vietnam*.

The third session was on AQD's initiatives on building capacities of local institutions for sustainable aquaculture, and this was presented by Mr. Renato Agbayani, Head of AQD's Training & Information Division.

Trainees and students

AQD conducts training in Vietnam on KHV and SVC



View more photos at the AQD website <u>www.seafdec.org.ph.</u> Photos courtesy of Dr GD Lio-Po

ixteen participants (11 females, 5 males) attended the hands-on training on the detection of KHV (koi herpes virus) and SVC (spring viremia of carp) conducted by AQD in Vietnam from 27 August 2007 to 5 September 2007.

The training is a collaboration between AQD and the National Fisheries Quality Assurance and Veterinary Directorate (NAFIQAVED) of Vietnam's Ministry of Fisheries, and partly funded by the Government of Japan Trust Fund's fish disease project.

Why KHV and SVC?

These two are diseases threatening Vietnam's lucrative freshwater ornamental industry. With outbreaks noted in the USA and in some EU member countries, health certifications are now required, including a twoyear record of absence of SVCV and KHV in the exporting country. Such certifications are based on diagnostic tests that use cell culture, Polymerase Chain Reaction (PCR), Reverse Transcriptase PCR (RT-PCR) and others. This means the need for NAVIQAVED to set up virus diagnostic capabilities.

The training instructors included Dr. Gilda Lio-Po, Head of AOD's Fish Health Section; Dr. Edgar Amar, also of AQD; Dr. Ly Tih Thanh Loan, Ms. Nguyen Ngoc Du, Mr. Cao Thanh Truong and Ms. Nguyen Viet Dung of RIA-2. They and the participants also went on a field trip to a koi grow-out pond in Hoyen Binh Chanh, Ho Chi Minh City. They collected, dissected

and processed 153 live samples of apparently healthy carp samples as part of the practicals. - FROM THE REPORT OF GD LIO-PO

Training sessions of the ICD-SA project for Filipinos



MUDCRAB @ N.SAMAR

eventeen participants attended the second phase of the Northern Samar seasonlong training course on *Mudcrab culture*.

Focusing on stock assessment, the training was held November 6 to 9 (6 & 8 for the lecturesdiscussions; and 7 & 9 for the hands-on sessions) at the Catarman campus of the University of Eastern Philippines, and then at the Municipality of Rosario.

Among those who attended were fishers, a coconut farmer, a housewife, a security guard, and fishery officers, all aiming to make mudcrab culture a lucrative source of income.

They learned much from the lectures and discussions with AQD's Dr. Emilia Quinitio and Ms. Didi Baticados.

The AQD staff were joined by Ms. Joelyn Biag and Ms. Buenafe Dongoyan of MODE, Mr. Pepe Lutao of BFAR, Ms. Sheilah Vergara of CATP, and Ms. Tess Ecamina & Mr. Rafael Vista of ACE. They represent AQD's program partners.

In-between and after the training dates, the

AQD team was also able to assess a proposed crab nursery site and monitor the construction of another; gather collection data on crabs and other species; and met with the Vice-Mayor of Rosario, Mayor of Pambujan, and the project's site managers.

The Northern Samar mudcrab project is under the umbrella of ICD-SA, or the *Institutional capacity development for sustainable aquaculture* project. Mr. RF Agbayani heads the team. ICD-SA seeks to transfer appropriate technologies and fishery resources management techniques. -FROM THE REPORT OF RF BOMBEO

On their way to the site in Rosario where the trainees can practice stock assessment techniques; Dr. ET Quinitio shows off a small device for crab collection; and a child sets out to collect crab



RPAGADOR

Elements of a working cage culture technology (top to bottom): securely-sewn net cage, strong bamboo support, quality seedstock, and the how-tos of culture as taught by experts

CATFISH-TILAPIA @ CAPIZ

hirty-six farmers aged 25-74 years old (26 men, 10 women) from 9 barangays in Dumarao came to attend the first phase of *Freshwater aquaculture*.

The season-long training course is an offering of the ICD-SA project in Capiz funded by the provincial government. The first session was held November 14-15.

The trainees listened to the how-tos of tilapia and catfish culture from AQD's Mr. Armando Fermin, Engr. Emilio Aralar, and Mr. Ruel Eguia. They also learned the concepts of community-based aquaculture from Mr. RF Agbayani.

Under Mr. Joel Gaitan, also of AQD, the trainees constructed 6 units of floating cages (4 x 4 x 1.5 m) for tilapia, catfish and freshwater prawn.

As the phase 1 session finale, the trainees stocked their cages with 3,000 pieces of tilapia, 3,000 prawn and 650 catfish.

- The next (phase 2) session is scheduled for
- December 4-5, also at the

-FROM THE REPORT OF RR PAGADOR

NIA Bunkhouse in Codingle, Dumarao.

MILKFISH @ GUIMARAS

wenty-seven participants continued on to the second phase of *Milkfish cage culture*, a seasonlong training course for oilspill affected families in Guimaras.

Funded by Petron Foundation Inc, the second phase is a handson module on stock sampling, water quality, feed formulation and preparation and cage maintenance. It was conducted 16-17 November at AQD's Igang Marine Station.

The participants represented four barangays in Nueva Valencia: Igang, Magamay, San Antonio, and Sto. Domingo.

The resource persons from AQD included Mr. Albert Gaitan, Dr. Relicardo Coloso, and Engr. Nelson Golez. Also present was Mr. Jess Borci of the Philippine Business for Social Progress (PBSP). -FROM THE REPORT OF CV GENZOLA

Vet students, an analyst, and two technicians

STUDENTS FROM AKLAN

welve veterinary medicine students from the Aklan State University spent 10 days (beginning November 5) at AQD familiarizing themselves with fish health.

They were introduced to disease development in aquaculture and diseases of crustaceans by Dr. Celia Pitogo and to diseases of fishes by Dr. Edgar Amar.

The vet students also studied modules on viruses, fungi, and fish parasites; and did practical work on monitoring shrimp larvae, preparing sterile media and other materials, isolating and counting bacteria, and sending samples for diagnosis.

AQD's fish health staff also demonstrated the PCR methods to detect viruses, electron microscopy, and slide preparation.

The soon-to-be vets viewed videos and spent time at the AQD library.

ANALYST FROM SIQUIJOR

laboratory analyst ~ Ms. Judy Buerom ~ from Aqua Cards Inc in Siquijor underwent a 4-day special training on the detection of white spot syndrome virus using PCR. This was from 20 to 23 November, and mostly handled by Dr. Leobert de la Pena with the assistance of Mr. Geimbo Capulos. Ms. Buerom's training was sponsored by VTI-RSY of Bacolod. -FROM THE REPORT OF CV GENZOLA

In Igang, Dr. RM Coloso emphasis a point in feeding management ("never overfeed the stock; it's costly and it's polluting"); the participants listen intently and relax after a lecture. Of the original 30 who attended the phase 1 module, three were not able to make it to phase 2





Ms. Buerom learns to detect WSSV using PCR (top) while the vet students from Aklan pay attention to Ms. Thesa Billena's orientation on electron microscopy and Mr. Demy Catedral's demonstration of fish disease detection



New client for ABOT

s. Betty Lua (shaking hands with AQD Chief Dr. JD Toledo above) and Mr. Fortunato Sanchez Jr are the new clients of AQD in the *Agree-Build-Operate-Transfer (ABOT) AquaNegosyo* program.

Their agreement with AQD was signed November 23 at AQD's Tigbauan Main Station in Iloilo.

The clients hail from Cebu, and would like to develop their aquaculture enterprises further. Their interests? Milkfish culture, seabass nursery and grow-out, biosecure tiger shrimp culture, mudcrab culture, and seaweed pond culture.

For the technical assistance it will extend, AQD expects to get 8% of the client's net income after each cropping, for a maximum 3 crops a year. This money will help fund AQD's research & development programs.

TECHNICIANS FROM MALABON CITY

wo undertook a 5-day training course on natural food culture and feed formulation that was offered by AQD's Binangonan Freshwater Station.

From November 5 to 9, Ms. Ma. Rosa Cristina Alvarado and Mr. Manuel Penaranda, both employees of BSJ Fishing and Trading (Malabon City), were given lectures and hands-on practice.

The training was arranged two weeks after the request of BSJ's Mr. Alex Inocentes, a potential ABOT client. -FROM THE REPORT OF MRR EGUIA

Guests and visitors

FROM WUXI, CHINA

r. Fu Hongtuo, a genetic specialist in prawn breeding and tilapia selection, and Mr Liu Bo, a researcher in fish pathology and nutrition, visited AQD this month.

On the 15th, they gave a brief overview of research conducted by the Freshwater Fisheries Research Center (FFRC) of Chinese Academy of Fishery Science, Wuxi City, Jiangsu Province, China.

Research at FFRC's Biotechnology & Aquaculture Department focuses on: (1) survey on genetic polymorphism; (2) sex control; (3) genetic improvement of common carp, tilapia and *Macrobrachium* spp; (4) gene transfer; (5) sexrelated genes and markers; (6) polyploidy induction; (7) cell fusion and nuclear transfer; and (8) domestication of native wild species.

At their Aquatic Animal Disease Prevention & Medicines and Nutrition Department: (1) nutritional requirements of cultivated fish and special aquatic products; (2) fabricated pellets and additives, (3) natural feeds; (4) microorganism feeds; and (5) water treatment of fishery environment and biological control of fish disease.

GHENT, BELGIUM

r. Joseph Leopoldo Laranja, an MS Aquaculture graduate of the Laboratory of Aquaculture and Artemia Reference Center, Universiteit Ghent, Belgium, came to AQD to deliver a seminar on November 23. He spoke on the *In vitro determination* of the prebiotic potential of dietary carbohydrates in fish. Clockwise from top: The seminar audience; Mr. Laranja; Dr. Fu, Mr. Bo and AQD's Dr. Ma Rowena Eguia; the exceptional

children of SPED, and Dr. Bailly

ILOILO CITY

xceptional children, 78 of them, with their parents and guardians visited AQD's Big Hatchery and FishWorld on November 14.

They were from the Special Education-Integrated School for Exceptional Children (SPED-ISEC) in Iloilo City. Belonging to Grades 1 through 6 under Mr. Jose Geliang, Coordinator, and Ms. Elizabeth Orquiola, Principal III, they were celebrating the *Deaf Awareness Week*.

"I listen with my heart," are the words printed on their shirts.

LOS BANOS, LAGUNA

r. Nicolas Bailly, OIC-Philippine Office of the WorldFish Center's FishBase Project, toured AQD's hatchery facilities and laboratories on October 30.

A peek at BFS, DBS...

WHAT CAN BE LEARNED IN GERMANY

FS or the Binangonan Freshwater Station of AQD in Rizal sent its program leader and scientist Dr. Ma. Lourdes Aralar to the University of Hohenheim in Struttgart, Germany for two months starting October 1.

Funded by DAAD, Dr. Aralar conducted a shortterm study on bioenergetics (=respiration) of the freshwater prawn *Macrobrachium rosenbergii*. She was also able to give a lecture to M.Sc. and Ph.D. students on aquaculture of freshwater prawns, and participated in a

Below from left to right: Dr. Aralar sets up the respiration chambers for freshwater prawn; visit to brook trout and rainbow trout farm with M Sc and PhD students; with Dr. Ulfert Focken of Hohenheim University and Dr. Modadugu Gupta, Keynote Speaker at the anniversary celebration symposium that celebrated the 25th anniversary of Hohenheim's Institute for the Tropics and Subtropics. Dr. Aralar was also able to visit a trout farm to observe its culture operations.

The objectives of the DAAD grant was to provide former scholars opportunities to renew ties with German institutions. It is also to be noted that Hohenheim used to send to AQD their students who were conducting thesis in aquaculture.

Dr. Aralar's impressions of her research trip?

"Germany and other European countries put a high premium on organic products, including those from organic aquaculture operations," she said. "There are research activities focusing on organic aquaculture. Another research interest is on the utilization of detoxified Jatropha meal for animal feed, including aquaculture feeds."



PHOTOS COURTESY OF DR. ARALAR

... the stops in the north at iba pa

WHAT AQD SERVICES CAN BE EXTENDED IN THE PROVINCES OF TWO SENATORS

MS or the Tigbauan Main Station of AQD in Iloilo sent its senior managers to Luzon for consultations with stakeholders and site assessments in October after the ABOT forum. The stops for Dr. Clarissa Marte (division head of technology verification and demonstration), Mr. Rene Agbayani (division head of training & information), and Mr. Armando Fermin (program leader of the mollusc program) were as follows:

Baler, Aurora

for the consultation with the province's fisheries stakeholders. Held October 22, the consultation was hosted by Dr. Eusebio Angara, president of the Aurora State College of Technology (leftmost photo). The Aurora project proposal was initiated by Senator Edgardo Angara.

BFAR multi-species hatchery still in Baler on October 22. The AQD team assessed its operations

Tuguegarao, Cagayan for the

consultation with stakeholders which was held October 24 at the conference room of the Cagayan Economic Zone Authority. The Cagayan project proposal was initiated by Senator Juan Ponce Enrile





Governor Bong Antonio (facing camera) on October 25. Leftmost is Dr. Mildred Abella, head of Cagayan's Provincial Agriculturist Office

Meeting with Dr. Jovita Ayson (rightmost), Regional Director of BFAR-I on October 25, at her office. Leftmost is Mr. Bernie Comit, fisheries officer. In the middle: Mr. Fermin, Dr. Marte, Mr. Agbayani



THANKS TO MS. LITA AGBAYANI

PAO tilapia hatchery-nursery in Sta. Ana operations was assessed October 24

WHAT CAN BE GAINED FROM A FARM

BS or the Dumangas Brackishwater Station of AQD in northern Iloilo yielded scrumptious harvests in September through November 2007, and AQD employees especially those from the main station in Iloilo seemed to get early Christmas packages what with the lower-than-market prices, salary-deductible at that:

Сгор	Date of harvest	Production	Sales at AQD
Shrimps	September 4 September 11	177 kg sold to 80 AQD staff at P220/kg 292 kg sold to 89 AQD staff (70 from TMS; 19 staff from DBS) at P200/kg	P38,940.00
			P58,400.00
Alimango	September 11	9 kg sold to 6 AQD staff at P230/kilo (female) and P150/kl (male)	P 1,590.00
Milkfish	October 5	129 kg sold to 43 AQD staff at P65/kg	P 8,385.00
Seabass	October 13	51 kg harvested for the ABOT forum	
Red snapper	October 25	80.8 kg sold to 40 AQD staff at P170/kg	P13,736.00
Red snapper	November 5, 7, 9	596.9 kg: 134.2 kg sold to AQD staff at P170/kg and 462.7 kilos sold to fish vendors, restaurants and private individuals at P200/kg	P16, 683.50

- FROM THE REPORT OF MRT TAPALES

WHAT CAN BE HAD FROM A RUMMAGE SALE

P7,416 ~ of November 23's rummage sale organized by the Journal Club in TMS will buy gifts for selected indigent residents of AQD's neighboring barangays. Club members first offered the goods to employees before heading to the Tigbauan market.

Club President Mr. Stephen Alayon reported that buyers included senior citizens, children, police, tricycle drivers, vendors, and farmers who bought almost all the goods within an hour. "All were happy... those who donated the items, the sellers, and the buyers. Thank you!"

8



NEWLY ISSUED PUBLICATIONS

Recent developments in the genetic improvement of the giant freshwater prawn, 86 pages, compiled by MRR Eguia & MLC Aralar, contains results from the research project funded by the Government of Japan Trust Fund. The project is a collaboration under the ASEAN-SEAFDEC Fisheries Consultative Group

A *folder-flyer* that can hold books and stuff has notes on AQD's new vision-mission, research & development framework, technology transfer pathways, and contact addresses for the SEAFDEC Secretariat and the Departments

The AQD Magic is the introductory video on AQD's programs and thrusts with historical notes. The video was first shown at the November 2007 meeting of the ASEAN-SEAFDEC FCG in Iloilo City





Carl Linnaeus, the Encyclopedia of Life, and the Smithsonian

TU Bagarinao Fulbright Scholar 2007

ashington DC, 13 November 2007. Today the Smithsonian Institution hosted the Symposium "Three Hundred Years of Linnaean taxonomy" in celebration of the 300th birth anniversary of Carl Linnaeus (1707-1778) and the exhibit of Linnaeus' own copy of the first of 12 editions of Systema Naturae (1735-1768). Linnaeus was a medical doctor, a professor at the University of Uppsala, and above all, Sweden's most famous botanist-naturalist who sought to list and order the whole of Creation and thereby laid the foundations of taxonomy. He described and named about 10,000 species, including the familiar plants Oryza sativa, Zea mays, Cocos nucifera, Mangifera indica, Theobroma cacao, Coffea arabica, Hibiscus rosasinensis, and Ulva lactuca, and the animals Homo sapiens, Hirudo medicinalis, Cyprinus carpio, Carassius auratus, Salmo salar, Haliotis asinina, Perna viridis, and Placuna placenta. He explored the Lapland, lived in Holland, and visited France and England. He extended his reach around the world by sending many students ('apostles') on voyages of exploration, including Daniel Solander and Anders Sparrman who traveled with Captain James Cook, and Petrus Forsskal of Chanos chanos, Epinephelus fuscoguttatus, and Scylla serrata fame.



The one-day symposium was a semester's course in modern taxonomy. Gunnar Broberg of Lund University, Sweden, gave a historical perspective on Linnaeus. Groberg has written a booklet on Linnaeus the contents of which are also in several websites. Gerry Moore of the Brooklyn Botanic Garden, New York, compared Linnaean plant taxonomy as practiced by Linnaeus and as used today. David Roberts of the Natural History Museum London talked about Linnaean systematics, collaborative taxonomy, and the Web. Michael Donoghue of the Peabody Museum of Natural History, Yale University, Connecticut, argued that taxonomists should seriously consider an alternative system of nomenclature. Mark Siddall of the American Museum of Natural History, New York, made leeches forever glamorous by using Hirudo medicinalis and relatives

The two-day Linnaeus Exhibit at the NMNH: the marked copy of Systema Naturae (1735), some species with L. in their names, and the author in his wedding finery, holding a sprig of the twinflower Linnea borealis L. (also shown as herbarium specimen, at right).

as examples of the use of DNA bar codes in Linnaean taxonomy. To cap the symposium, Acting Secretary Cristian Samper of the Smithsonian Institution talked about the Encyclopedia of Life (www.eol.org), a project that seeks to construct a web site for each of the 1.8 million species that have been described and make them all accessible through a single portal. Three hundred years ago, Linnaeus set out on a nearly impossible task of classifying and naming what was thought to be about 70,000 species on earth. Today, he would have been happy to see thousands of scientists continuing his work to document 1.8 million species. Samper offered EOL as a birthday present to Linnaeus. Nice touch. The Encyclopedia of

The Encyclopedia of Life brings together several of the world's natural history institutions including the Smithsonian, the Field Museum in Chicago, Harvard University, the Woods Hole Marine Biological Laboratory, Missouri Botanical Garden, and the **Biodiversity Heritage** Library consortium. The project collaborates and links with other efforts already underway such as the Catalogue of Life, Tree of Life Web, FishBase, and Amphibiaweb. EOL will cost \$50 million in its first five years. Already the Alfred P. Sloan and the Catherine T. and John D. MacArthur Foundation has committed \$12.5 M for the first two years. The EOL is a pet project of Cristian Samper, a 41-year old Colombian-American scientistadministratorcommunicator with a long and impressive resume (all on Google). I fell in love with the guy after one hour of lecture. For you, too, to get a feel for the man and his job, I attach his speech, "The Smithsonian: Fact, Fiction, and the Future". [Editor's note: for AQD employees, this file was sent as an email attachment. We regret that it's too long to be included here.] Just as Linnaeus immersed himself in nature, cultivated 'apostles', and founded the Royal Swedish Academy of Sciences, so Samper studied neotropical biodiversity, designed an environment education program for 10,000 schools, and founded the Ministry of the Environment the Alexander von Humboldt Biological **Resources Research** Institute in Colombia. Between Linnaeus and Samper, there came Charles Darwin (1809-1882) and the Origin of Species in 1859; journalist Nina Burleigh

Gregor Mendel (1822-1884) and the Treatises on Plant Hybrids in 1865; James Watson (1928-200), the DNA double helix, and the Human Genome Project; and Edward Wilson (1929-200), sociobiology, and biodiversity. Some breakthroughs in science take just a few years, but it has taken taxonomy, genetics, evolution, molecular biology, and biodiversity about 300 years to come together and back to taxonomy. There is a beauty to all of this. Between Linnaeus and the Encyclopedia of Life, there, too, was James

Smithson (1765-1829), an Englishman who bequeathed his library, mineral collection, and entire fortune to the "United States of America, to found at Washington, under the name of the Smithsonian Institution, an Establishment for the increase & diffusion of Knowledge among men"even though he had never visited the US nor known any Americans. Created by an act of the United States Congress in 1846, the Smithsonian Institution is now the world's largest museum and research complex with 19 museums, the National Zoo, and several research facilities around the world. The total number of objects, works of art, and specimens is more than 142 million, most of them at the National Museum of Natural History. But the Smithsonian almost did not come to be. In her book The Stranger and the Statesman,

(2003) tells the story. When then US President Andrew Jackson was informed of Smithson's gift in 1835, the news was received at Congress with a mixture of disinterest, befuddlement, suspicion, ridicule, and indignation. Some Congressmen argued that it was dishonorable to take any money from an Englishman, and it was beneath the dignity of the United States to confer immortality on a man merely for sending over a treasure. Fortunately, former President John Quincy Adams was then serving in Congress. He had wanted to expand federal government into the realms of science and education and to create a European-class American scientific community, but had faced opposition. A truly intellectual scholar politician passionately interested in astronomy, he was deeply moved by Smithson's words. After persistent discussion, Adams persuaded Congress to accept the Smithson bequest. Thus in 1836, Jackson sent diplomat Richard Rush to London to secure the funds. It took Rush two years of negotiations with Smithson's heirs and the British courts before he could bring to New York and deposit at the US Mint in Philadelphia 105 sacks of gold sovereigns worth 104,960 British pounds (worth US\$508,318 in 1836). But then the funds were stolen! When Smithson's

bequest arrived, the United States was broke. Half a million dollars in 1836 was



the equivalent in buying power of 50 million dollars today. It was an enormous sum in a country where the per capita annual income was 100 dollars. Before Rush arrived in1838, Congress passed a bill with a last-minute tack that authorized the Treasury Secretary to invest all of Smithson's money in state stocks, but without the states being directed to use the money for "diffusion of knowledge among men". Adams was the sole voice of protest against the last minute tack. Almost all the funds were invested in Arkansas real estate bonds, which turned bad quickly (or embezzled by a prominent politician). Adams rallied public interest in the lost funds and finally convinced Congress in 1841 to repeal the bill authorizing investment of Smithson's money in state funds. No one was held personally accountable for the loss, but the US treasury was ordered to replenish the fund and pay 6% a year on the capital. But Congress took another five years to decide what to do with the bequest. When

Smithson's bequest arrived, the United States not known for its scientists, its intellectual life, or its diffusion of knowledge. The politicians assigned to define an institution for the diffusion of knowledge were not able to fulfill the task quickly because of competing ideas about what America's culture was going to be. That Smithson specified Washington was another problem. Aside from the White House and the Capitol, Washington was forests and marshland and dirty streets, cholera and malaria raged, there was no culture, and prostitution was as brisk as the slave trade. Some politicians thought a working farm attached to an agricultural college in the national capital best diffused the kind of knowledge Americans needed. Still others wanted the money to go toward educating the common people, or a normal school for teachers. John Quincy Adams argued for use of the Smithson funds to build a national American observatory outfitted with great telescopes and

staffed by learned men. Elitist Senator Rufus Choate imagined building the greatest library in human history. Industrialist Representative Robert Owen preferred the creation of a federal university. Naturalist **Representative Joel** Poinsett favored a federal institution for the promotion of science, combining a botanical garden, an observatory, laboratories, libraries, and publications for both scientists and lay people. Richard Rush submitted a proposal for a national institution that could nourish American intellectual resources and banish the image of America as a backward nation inhabited by illeducated provincials. The final plan for the Smithsonian Institution approved by Congress very closely followed Poinsett's ideas and Rush's proposal. On 10 August 1846, 17 years after Smithson's death in Genoa and 11 years after word of his bequest reached the White House, President JK Polk signed the bill that created the Smithsonian Institution. <page 12 pls>

Clam: fossilized and donated

e will learn later how old this clam really is. The donor, Ms. Louella Ali of Cebu City, is having it carbondated. For the moment AQD thanks the Ali family for the specimen donation to FishWorld.

Contributions from AQD employees are always welcome!

Please send text separately from the photos. If possible, photo quality should not be lower than 300 dpi

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<from page 11> James Smithson was passionate about mineralogy and chemistry, participated in the scientific community in England and Europe, and became a Fellow of the Royal Society in 1787 and a charter member of the Royal Institution in 1799. He lived in Paris, London, Florence, and Genoa, and travelled to Scotland and Switzerland. But he was the unacknowledged illegitimate son of a prominent father, he never married, and had no children. Biographers

have variously speculated about the reasons behind Smithson's strange bequest to the United States. I dare to advance another guess. Smithson FRS must have known about Linnaeus (who was by then a dead superstar scientist) and how Linnaeus' collections became the starting point for the Linnean Society in London, not Sweden. Linnaeus had four daughters and a son Carl the Younger, but the son died without an heir in 1783, just five years after the father. The women in

the family sold to Sir James . Edward Smith of London all of Linnaeus' botanical and zoological collections: 14,000 pressed plants, 158 fishes, 1564 shells, 3198 insects, 1600 books, and 3.000 letters and documents. To care for the collections, Smith founded in 1788 the Linnean Society, which became the world's premier society for the study and dissemination of taxonomy. Smithson must have wanted something similar for himself across the Atlantic and made sure of it with his own money. His

motives will never be known because most of his documents, mineral collection, and personal items were lost in a fire in the 10-year old Smithsonian Castle on an icy day in January 1865. But I like my explanation, don't you? In 1904, Alexander Graham Bell, then Regent of the Smithsonian Institution, exhumed Smithson's remains in Genoa and brought them to Washington DC for reburial at the Smithsonian Castle. James Smithson must be more than pleased.