

## CSC confers scientist rank to 3 DOST-ITDI researchers



*The ITDI scientists, Dr. Rosalinda C. Torres, Chief Science Research Specialist (2nd L); Dr. Marissa A. Paglicawan, Supervising Science Research Specialist (3rd L); and Dr. Annabelle V. Briones, Director III (4th L)*

Civil Service Commissioner and Scientific Career Council (SCC) Chair Hon. Alicia Dela Rosa-Bala, through SCC Executive Secretary and National Academy of Science and Technology Director Lunyngning E. Samarita-Domingo, officially announced last April 26, 2017 the conferment of the Scientist 1 Rank to three researchers from ITDI.

Commissioner Dela Rosa-Bala and SCC Co-chair DOST Secretary Fortunato T. dela Peña conferred the rank to Deputy Director for Research and Development Dr. Annabelle V. Briones, Standards and Testing Division Chief Dr. Rosalinda C. Torres, and Advanced Materials Section Head-Materials Science Division Dr. Marissa A. Paglicawan. Two others from the Philippine Nuclear Research Institute (DOST-PNRI), namely, Fernando B. Aurigue and Glenda B. Obra complete the list.

All five were selected from seven applicants through a 5-step screening procedure, which concludes with the conferment of the rank from Scientist I to Scientist V. Samarita-Domingo released the conferment paper with each appointment effective February 27, 2017. The five new Scientist 1 of DOST, took their oath during the investiture ceremony held on June 19, 2017 at Luxent Hotel in Quezon City.

Briones, Torres, and Paglicawan are entitled to automatic increase in salary grade corresponding to their rank. Aside from their current benefits under RA 8439 or the Magna Carta for Scientists, Engineers, Researchers and Other S&T Related Personnel, other entitlements include travel assistance of US\$ 2,000 every two years (foreign or local), membership in one international scientific organization and/or subscription to scientific journals, and publication assistance.

With their conferment, ITDI now has 11 scientists in its roster, with an earlier batch already retired from service. ITDI's feat was started in 1984 by Olympia N. Gonzales as Scientist IV, Felicidad E. Anzaldo and Guillermina Mañalac (deceased) as Scientist III, and Pilar E. Anglo and Claro M. Santiago, Jr. as Scientist I. Two more were conferred the rank of Scientist IV in the 90s namely, Violeta Arida and Lydia Joson (both deceased), and one Scientist II, Felipe Vinluan.

Meanwhile, the Scientific Career System (SCS), established on March 17, 1982 by the late President Ferdinand E. Marcos, is a recognition program under the CSC and DOST for full-time researchers in the government, UP System, and SUCs.

Its conferred scientists are called career scientists because of its unique ability to provide and maintain a recruitment process for qualified researchers so that they may progress in their career, and be recognized and rewarded for exemplary public service.

In an earlier report, SCS claimed its aim to balance the shortage of R&D manpower in the country where in the 2011 South East Asian Regional Workshop on Science, Technology and Innovation Indicators held in Vietnam, the Philippines reported that there are only 11,490 scientists and engineers in the country. Of these only 3,198 work in the government, which translates to 130 scientists and engineers per million population.

## National research council credits ITDI researcher for advance in health industry

Dr. Annabelle V. Briones (3rd L), ITDI Deputy Director for Research and Development, is one of 11 researchers credited by the National Research Council of the Philippines (DOST-NRCP) during its recent Annual Scientific Conference, themed as "Philippine Development: Foregrounding Ethical and Moral Values" held at the Philippine International Convention Center in Pasay City.

Held in conjunction with their 84th General Membership Assembly, NRCP President and National Scientist Edgardo D. Gomez, together with Science Undersecretary for S&T Services Dr. Carol M. Yorobe, and NRCP Executive Director Dr. Marieta Bañez-Sumagaysay led the conferment ceremony.

DD Briones was cited for her work on innovative techniques on the use of carrageenan in industrial and health applications. She was also affirmed for her study on indigenous sources for new products and her initiative to develop the Philippine Mosquito Ovicidal/Larvicidal (OL) Trap System: DOST Anti-Dengue Device.

DD Briones has consistently proven her research mettle by entering the prestigious 2016 R&D 100 Awards last year, referred to as the "Oscars of Invention," where she landed as one of the top 100 finalists among 210 of the world's most innovative technologies and services of the past year.

She received her award on November 3, 2016 at the Gaylord National Resort and Convention Center in Oxon Hill, Maryland, Washington, D.C. together with Daisy M. Tañafranca for another ITDI technology as R&D 100 finalist, Pack of Hope RTE Chicken Arroz Caldo as First Stage Disaster/Relief Food developed by the Packaging Technology Division.

The R&D 100 Awards Committee and R&D Magazine awarded both of ITDI's technologies under the Process/Prototyping Category. An independent panel of more than 50 judges representing many of industry's leading international R&D companies and national laboratories, as well as many newcomers to the R&D 100 Awards, selected the 100 finalists.



NRCP's 2016 awardees included (from left to right) Dr. Aguja, Dr. Vergeire-Dalmacion, Dr. Apostol, Dr. Alvindia, Dr. Hufana-Duran, Dr. Aviso, Dr. Robles Jr., Dr. Esguerra, Dr. Briones, Dr. David, and Dr. Mingala.

Meanwhile, NRCP recognized 10 other researchers as follows:

- **Dr. Socorro E. Aguja** - science education, environmental studies, human capital development, and citriculture;
- **Dr. Godofreda R. Vergeire-Dalmacion** - pharmacoepidemiology, pharmacovigilance, and maternal health care;
- **Dr. Jovencio G. Apostol** - natural products and beneficial contributions to vascular pharmacology, toxicology, pharmacogenomics, pharmacy education, clinical pharmacy, and pharmacy practice;
- **Dr. Dionisio G. Alvindia** - development of natural and cost-effective bio fungicides for banana, mango and other important tropical crops;



## Science head pilots "Science for the People" Roadshow in Southern Tagalog

Science Secretary Fortunato T. dela Peña, together with Laguna Governor Ramil L. Hernandez represented by Vice Governor Atty. Katherine "Karen" C. Agapay and several DOST officials, led the pilot for the "Science for the People" Roadshow and, SETUP and CEST Convention held at Lolo's Place in Bay, Laguna Province on February 20, 2017.

Echoing his sentiments during a previous interview with the department's information institute for the S&T Post, he boomed this saying, *"I will see to it that capable state colleges and universities are given opportunity to do their share in research to address the concerns of their regions."*

He added that SUCs are troves of great research findings and that *"... Being unable to explore the many ways by which these may be used not only wastes what little and precious resource that we have but also deprives our people of what should have been already theirs."*

The event, hosted by Engr. Samuel L. Caperiña of the Provincial S&T Center (PSTC) in Laguna, opened early at 6:30 in the morning with breakfast and dialogue with the Secretary and DOST IVA's scholars.

An opening program led by DOST IVA Director Dr. Alexander R. Madrigal highlighted the extent of S&T services that his office provides to partners from 23 Geographically Isolated and Disadvantaged Areas (GIDAs), MSMEs (Micro, Small and Medium Scale Enterprises), and the public.

In testimony, one MSME from each of the region's province received the Best Community-Based Program (CBP) Adoptor award. While an earlier

established embryo-cultured *makapuno* plantation in Batangas led DOST IVA to aim to increase hectareage planted to the mutant coconut. Together with the Mayors of three municipalities in Quezon, namely, Alabat, Perez, and Quezon, the Regional Office and PSTC-Quezon jointly signed a commitment board to establish an island planted entirely to embryo-cultured *makapuno*.

Other co-signees were the Philippine Coconut Authority, Philippine Coconut Research and Development Foundation, and DA IVA.

The roadshow and convention also aimed to spotlight the steadily widening coverage of S&T services that business and marginalized groups in the region now enjoy. By following the "Bring a Friend" idea during the day's activities, DOST IVA hoped to increase participation of MSMEs in the department's Small Enterprises Technology Upgrading Program (SETUP).

As well, DOST IVA hoped to create a surge in awareness and participation of GIDAs in its Community Empowerment through S&T (CEST) campaign. Thus, Secretary Dela Peña presented several Enhanced CEST Program packages to beneficiaries from Batangas and Quezon and jointly signed a commitment board with them.

Other agencies that co-signed for the program include the agency heads of labor, trade, agriculture, agrarian reform, social services, and economy.

In the afternoon, three simultaneous, pocket seminars were held during the SETUP and CEST Convention. STII Director Richard P. Burgos, represented by Dr. Aristotle V. Carandang of CRPD-STII, introduced the "Science for the People" branding during the Dairy Farming Stakeholders Forum.

PSTC-Quezon Director Maria Esperanza E. Jawili and PSTC-Cavite Director Engr. Raul D. Castañeda facilitated a forum on CEST and community-based projects.

Meanwhile, PSTC-Batangas Director Felina C. Malaban and PSTC-Rizal Director Fernando E. Ablaza steered the forum on SETUP and prospective SETUP adoptors.

Finally, the Secretary completed the roadshow with a facility tour of four Laguna community-based projects. These include: carabao



*Left frame: Science Secretary dela Peña (in barong) listens to a briefing during his project visit to the CALABARZON Food Solutions Hub or CFoSH, a facility housed at the Laguna State Polytechnic*

*University campus in Sta. Cruz, Laguna. CFoSH caters to food processing companies that require the use of special equipment like spray dryer (right frame) to manufacture innovative food products.*

# ITDI hosts Philippines-China symposium on bionics and biomimetics

## Opens interdisciplinary approach towards bold industry innovations

A bold approach to the use of synthetic methods to mirror biochemical processes opened an interdisciplinary meeting of the minds between the Philippines and China at ADMATEL in Taguig City on March 28, 2017.

ITDI hosted four bionics and biomimetic experts from Nanjing University of Aeronautics and Astronautics (NUAA), Tsinghua University (TU), and Chinese Academy of Sciences (CAS). They were joined by four other Filipino experts from the University of the Philippines Los Baños (UPLB), the Materials Science Division (MSD) and Environment and Biotechnology Division (EBD) of ITDI, and the DOST Balik Scientist Program.

DOST Assistant Secretary for International Cooperations Dr. Leah J. Buendia opened the symposium and welcomed guests. Her office granted the financial support through the DOST Grants-in-Aid program.

Meanwhile, ITDI Deputy Director for R&D Dr. Annabelle V. Briones conveyed high hopes that the symposium will strengthen the alliance and scientific collaboration between the Philippines and China. The list of topics discussed by the Chinese experts pointed towards a new direction in development of innovative technologies and products linking bionics and biomimetics.

Among these were two studies on biomimetics on gecko locomotion and biomimetics. The former is by Dr. Zhendong Dai, director at NUAA while the latter is by Dr. Yezhong Tang

of CAS. Meanwhile, growth of carbon nanotubes for gecko-inspired adhesive application and multiscale mechanics of biological materials found voice from Dr. Keju Ji, also of NUAA, and Dr. Xiqiao Feng, director at TU, respectively.

In the Philippines, Dr. Elizabeth G. Panerio of EBD reported that bionics and biomimetics are emerging technologies. Prof. Nelio C. Altoveros has long started on the use of drones and multispectral camera imaging for agriculture and environmental applications.

In addition, Dr. Dexter Rasonabe, a DOST Balik-Scientist, unlocked before the group the prospects of using graphene, a basic structural element of graphite and charcoal. Recognized as the world's first two-dimensional carbon material, graphene has many unusual properties including being about 200 times stronger than the strongest steel and high efficiency in conducting heat and electricity, among others.

With his work on forming graphene, Rasonabe may be on to tapping the global market for this material, which is projected to reach US\$278.47 million in the next three years.

Organized and facilitated by MSD and EBD, the activity was an outcome of the recent visit of Panerio to China. With the success of the symposium, both countries are looking up to a possible linkage on new R&D projects in bionics and biomimetics. **(DDGotis\ITSD)**



*Symposium hosts and guests (front row, from left to right) included: Dr. Dexter Rasonabe of the DOST Balik Scientist Program; Dr. Keju Ji of IBSS at NUAA; MSD Chief Dr. Blessie A. Basilia; Dr. Zhendong Dai, IBSS Director at NUAA; ITDI Deputy Director for R&D Dr. Annabelle V. Briones; CAS Professor Dr. Yezhong Tang; and Dr. Xiqiao Feng, Director, TU.*



## DOST-TAPI grants certificates of IP to MSD researchers



Frame 1: (second from left) TAPI Director Edgar Garcia poses with ITDI awardees Dr. Marissa Paglicawan, Dr. Blessie Basilia, and Brigida Visaya.

Three researchers of ITDI were awarded Certificates of Intellectual Property Grant by the Technology Application and Promotion Institute (DOST-TAPI) on the occasion of their 30th founding anniversary celebration on January 27, 2017 held at the Hotel H2O in Manila.

TAPI Director Edgar I. Garcia led the awarding of certificates for four Utility Models (UM) developed by a team of the Materials Science Division (MSD), which was registered with the Philippine Intellectual Property, Bureau of Patent.

MSD grantees were led by its chief Dr. Blessie Basilia together with Dr. Marissa Paglicawan, Supervising SRS, and Ms. Brigida Visaya, Senior SRS. The team registered the following UMs:

<u>Utility Model Title</u>	<u>Registration No./Date Issue</u>
Method of Using the Montmorillonite Functionalized Fiber	2/2015/000398 / 04/03/2016
Polycaprolactone-Carrageenan Nanofibrous Blends For Engineering	2/2012/000720 / 25/11/2016
Process for Producing Biodegradable Composition Comprising Thermoplastic Nanocomposite and Polyactic Acid	2/2014/000614 / 12/02/2016
Biodegradable Composition Comprising Thermoplastic Nanocomposite and Polyactic Acid and Process for Producing Thereof	2/2014/000615 / 12/02/2016

The World Intellectual Property Organization (WIPO) defines a utility model as a protection for an invention, which grants its maker/s an exclusive right and prevents others from commercially using the protected invention without his authorization for a limited period.

In its basic definition, which may vary from one country (where such protection is available) to another, a utility model is sometimes referred to as "innovation patents." (*DDGotis\TSD*)

## MSD's Basilia bests all at 2017 PIChE convention

### ***Bags Best Poster award***

Indeed, the way ITDI welcomed 2017 with a bang by winning awards seems to be sustained, for ITDI is at it again, particularly, MSD (Material Science Division). After being awarded IPRs at the start of the year, another award came the following month.

On February 25, 2017, MSD's Chief, Dr. Blessie A. Basilia bagged the Best Poster award in the 78th Philippine Institute of Chemical Engineers (PIChE) National Convention held at Limketkai Luxe Hotel, Cagayan de Oro City, from February 22 to 25 with over 800 attendees.

Getting the nod of the judges, her poster entitled "Influence of Thermal Treatment on the Microstructure and Mechanical Strength of Lead-free Solder and Under Bump Metallization of a Wafer Level Chip Scale Package" bested them all. (*CEmolaga\MSD*)

# ITDI - Industry Dialogues

## Meets MAP biz group

Ramon K. Ilusorio (*standing*), chair of the Management Association of the Philippines- Agribusiness and Countryside Development Foundation, Inc. (MAP-ABCDF), welcomed ITDI Deputy Director for Research and Development Anabelle V. Briones (*left row, extreme right*) during their 13th of 20 Weekly Forum held on April 4, 2017 at the Formation Center, Missionaries of the Child Jesus in Makati City.



DD Briones presented to the group the R&D, scientific, and technical services that ITDI is offering to industries for countryside development. Beside her was TSD-ITDI chief Nelia Elisa C. Florendo who co-presented the Food Innovation Center and other ITDI developed technologies ready for transfer. The forum was attended by 16 leading company heads in the country, including former Tarlac Governor Ms. Margarita "Tingting" DLR Cojuangco (seated at the right of Ilusorio). Ms. Cojuangco is, currently, president of the Philippine Public Safety College, Bureau of Fire Protection, and Bureau of Jail Management and Penology.

Meanwhile, Ilusorio, Chairman Emeritus of the investment house Multinational Investment Bancorporation and acknowledged Father of the Philippine Money Market, founded MAP-ABCDF to provide rural enterprises and associations with people knowledgeable on business and management services. MAP-ABCDF has nearly 60 member-companies in its roster. It regularly invites more than 9,000 companies to attend its weekly forum.

Others from ITDI who attended the forum were IDS-TSD head Dr. Violeta B. Conoza and Adelia M. Guevarra. **(AMGuevarra\TSD)**

## Holds "Kapihan para sa Industriya"

### Pushes support for DOST-ITDI Multi-industry Innovation Center

ITDI met with select business personalities on April 19, 2017 at ADMATEL in a bid to consult about the viability of establishing a DOST-ITDI multi-industry Innovation Center within the Bicutan Science Complex.

ITDI Director, Dr. Ma. Patricia V. Azanza welcomed participants and enjoined everyone to share their thoughts, express ideas, and expectations on this new technological venture.

While ITDI Deputy Director for Research and Development Dr. Annabelle V. Briones introduced the modular multi-industry innovation center giving emphasis on the benefits it will provide the industry.

In her presentation, Dr. Briones mentioned that the center will address concerns of different industrial sectors such as the absence of equipment for R&D, economic assistance, technology assistance, and lack of efficient manufacturing facilities.

She added that these will be resolved with the setting up of a common facility consisting of generic modular equipment with multi-function/multi-application; this will be retrofitted to different manufacturing lines including the use of automation process control and scaling up of pilot capacity production with materials handling support equipment.

She further said that industries may use the center for developing new products, product equivalent, product variances, and product re-introduction. Some industries may have pre-identified needs or an initial concept that needs further research and development.

In addition, Engr. Norberto Ambagan, Chief of the Food Processing Division, walked the participants through the building perspective of the Innovation Center and showed the layout of the facilities, such as the warehouse, equipment, and offices.

An open forum followed, which made way for exchanges of views and expectations that are valuable inputs for the project in progress.

Dr. Carlos Primo C. David, PCIEERD Executive Director, closed the consultative meeting with an explanation on how potential entrepreneurs or currently operating businesses may qualify and avail of assistance. **(DDGotis\TSD)**





## DOST-FIC products join spotlight at 2017 intl food expo



Various novelty food products made from locally available raw materials from the Philippines were among the attractions in two international food shows, namely: (i) International Food Exposition (IFEX Philippines) held last May 19 to 21, 2017 at the World Trade Center and Philippine Trade Training Center in Pasay City, Philippines; and (ii) FOOD TAIPEI (27th Taipei International Food Show) held on June 21–24, 2017 at the Taipei Nangang Exhibition Center, Hall I and TWTC Exhibition Hall I.

These products were developed by the DOST-FICs (Department of Science and Technology-Food Innovation Centers) established by the Department nationwide using DOST-designed and locally fabricated food process equipment currently being deployed in the regions which include the vacuum fryer, spray dryer, water retort, and freeze dryer.



The Philippines, through DOST's Industrial Technology Development Institute (DOST-ITDI) and DOST Regional Offices, joined local and international food companies in the two events. More than 700 companies joined IFEX Philippines while DOST-ITDI was among the 16 companies/agencies from the country that joined FOOD TAIPEI.

Organized by the Department of Trade and Industry, Center for International Trade Expositions and Missions, and Department of Agriculture, IFEX Philippines is the biggest international trade exhibition on the Philippines' and Asia's ethnic and specialty food, tropical fruits and vegetables, meat and poultry, and Halal-certified products, among others. *"It provides a business-to-business platform for local and international food companies to discover new markets, launch new products, and transact with the world's biggest buyers. It also provides a unique real life 'market test' opportunity."*

Likewise, FOOD TAIPEI, organized by the Taiwan External Trade Development Council (TAITRA), *"offers flourishing business opportunities to connect with food players from Taiwan and the Greater China Region, and is considered an attractive destination for Philippines' ready-to-eat, healthy and natural food products and industrial ingredients."*

Joining IFEX and FOOD TAIPEI was an opportunity for DOST to showcase its innovations in food processing and product development using local resources and DOST-designed food process equipment; while providing a chance to meet or transact with industry and other stakeholders and create a customer database (or potential adopters) from the visitors to its display booth. In addition, delegates got to view the product lines of neighbors, compare products, and network with others and get ideas that could inspire everyone to achieve operational innovation and excellence.

At IFEX, featured were new products from the DOST FIC-Main with free taste sampling which included: four variants of chili oil, spray-dried egg, spray-dried blood, spray-dried bile, *pinakurat* or spiced vinegar, and spray-dried *Balayan bagoong*. Four other products developed by ITDI's Food Processing Division, namely, drum-dried mango flakes, banana flakes, and *makapuno*; and cacao *tablea* completed the list.

Aside from these, 11 products from DOST's Regional FICs completed the novelty spread as follows: freeze-dried *Gracilaria* and *Arius* from Region 2; spray-dried Sea Grapes powder from Region 9 and *Bukolyte* from Region 11; vacuum-fried Crispy Sprouted *Monggo* from Region 2, Oyster mushroom from Region 4B, *Kamote* sticks from Region 6, Crunchy *Mayahini* or Venus clam from Region 8, and Marang fruit from Region 10; and Tea-Tums, a turmeric-ginger-lemongrass infused citrus juice drink from NCR, and a traditional *Ivatan* food made from banana roots called *Uved* from Region 2; both using water retort.

Meanwhile, at FOOD TAIPEI, showcased were vacuum-fried products such as mixed vegetable chips, carrot chips, okra chips, squash chips; and drum-fried macapuno flakes, banana flakes, and mango flakes.

The featured products also gained considerable interest in both events. Initial data showed that vacuum-fried foods topped the list at IFEX while drum-dried fruit flakes were tops at FOOD TAIPEI. A sizeable number of prospective buyers and investors also turned up from the booth visitors.

DOST-FICs currently serve as one-stop food research and development facilities that cater to the needs of local MSMEs, start-up businesses, and students. Here they can innovate, produce new products, and create added value to local agricultural and fishery resources. They work in collaboration with DOST Regional Offices, state universities and colleges, and the business sector. DOST-ITDI, as FIC-Main, leads regional centers in product prototype development and functions as overseer. One FIC shall be established in each region of the country, nine of which are now operational.

ITDI's participation to these international food events was made possible through DOST funds from PCIEERD (Philippine Council for Industry, Energy and Emerging Technology) and GIA (Grants-in-Aid) program. **(DOST-ITDI S&T MEDIA SERVICE)**



DOST-ITDI Director, Dr. Maria Patricia V. Azanza (L), and Engr. Norberto Ambagan, FPD Chief (R) @ the DOST-ITDI Booth, FOOD TAIPEI.

## CSC confers... *from p. 1*

With the career recognition system of SCS, incentives and rewards ensure attraction and retention of highly qualified persons in the fields of agricultural sciences, natural sciences, engineering and technology, and medical sciences.

SCS has conferred the scientist rank to 140 researchers since 1983. It has, currently, 34 active Scientist I, 5 Scientist II, and 4 Scientist III in its membership profile. **(AMGuevarra\ITSD)**

## National research... *from p. 2*

- **Dr. Danilda Hufana-Duran** - development and use of advanced reproductive biotechnologies and establishing laboratory standards and protocols that resulted in production and propagation of genetically superior water buffaloes;
- **Dr. Kathleen B. Aviso** - development of modeling techniques for the design and planning of eco-industrial and energy systems;
- **Dr. Alfredo C. Robles Jr.** - scholarly work on ASEAN-EU relations and on the Asia-Europe Meeting process;
- **Dr. Jose Perico H. Esguerra** - statistical mechanics of self-gravitating systems, random walks, Brownian motion, and first passage processes; and applications of fractional calculus in physics and mathematical methods for nonlinear and quantum systems;
- **Dr. Carlos Primo C. David** - short-term rainfall forecasting in the Philippines, as well as scholarly works on hydrology, climate change, and environmental geology; and
- **Dr. Claro N. Mingala** - veterinary immunology, microbiology, molecular biology and public health, as well as, development of DNA-based and rapid diagnostic tools for economically important animal diseases.

Other awardees for the Outstanding Institutions and member emeritus included Dr. Hope Sabanpan-Yu of Cebuano Studies Center, Dr. Elda B. Esguerra of the Postharvest Horticulture Training and Research Center; and Dr. Resil B. Mojares.

Awardees received a cash prize of Php25,000, a medallion of excellence, and a plaque of recognition.

NRCP is a collegial Science and Technology advisory body of the Department of Science and Technology. It has more than 4,000 researchers, scientists, and technologists across the country and around the world as members. **(AMGuevarra\ITSD)**

## Science head... *from p. 3*

milk production and processing in Magdalena; fruit processing, and cake and pastry making in Sta. Cruz; and roasted chicken processing in Calauan.

More than 300 participants from public, private, industry, and the academe, as well as, national and local quad media attended the first "Science for the People" Roadshow. These include Adelia M. Guevarra of ITDI, and heads and representatives of three other DOST agencies. **(AMGuevarra\ITSD)**

### **Our Business Is Industry**



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