

THE JAPAN SCIENTISTS' ASSOCIATION

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2018 Hokkaido Science Symposium held

JSA Hokkaido branch held 2018 Hokkaido Science Symposium on October 28 at Hokkai Gakuen University.

In the morning session the following three lectures were given: Mr. Yamada “Damages caused by low-frequency humming noise of heat pumps”, Mr. Konno “R&D of portable microphone corresponding to extreme low-frequency noise”, and Mr. Takahata “On the trial to seek the dismissal of the Sunagawa case.”

In the afternoon Prof. Nakajima (Pres. Sapporo City Univ.) was invited to deliver a lecture for public on past, present and future of AI (Artificial Intelligence). First defining intelligence to be the ability to properly handle information when insufficient, he began to explain the history of accelerating social development on the basis of three keywords, matters, energy, and information. In the 1950's computing machine became able to process not only numerical values but symbols, and in the 1970's or later automatic learning from big data has come possible thanks to progress of developing high-speed computing machine. Learning process in neural networks due to multilayer perceptron was found from the learning principle of brain, nowadays deep learning using a cascade of multilayers of nonlinear processing units is enlarging dramatically the possibility of AI application as seen in practical application of medical diagnosis and automatic operation.

As to AI utilization, Prof. Nakajima introduced his research, cloudization of public transportation service for central control of all busses and taxis in a city based on users' demand. Much more applications in various fields, for instance, welfare like healthcare and education, are taken into account, he said.

On the other hand, since AI draws results through learning based on data, the process would be in danger of intentional input of faulty data, biased data, and falsification of data by cyberattack, the professor remarked.

After the lecture Prof. Nakajima exchanged views with participants. They expressed questions concerning the following matters: 1) AI is utilized to enrich social life as well as to develop weapons for war. 2) AI used education and education by teachers. 3) Governmental educational policy to bring up man powers able to respond to AI society. The professor expressed his anxiety about AI weapons, and that though AI can teach knowledge, there are several things only human can do, and criticized that governmental “education of creativity” is the one to force all students into the same mold.

From years ago the Japanese government and financial circle have been paying attention to practical application of AI and tried to put it into practical use. For a long time he has insisted that how to utilize AI depends on social system, and thus it is inevitable for AI researchers and sociologists to discuss that. Who develop and innovate AI are humans. When utilize it persons involved should have a sufficient discussion on the subject.

The 38th National Symposium on Nuclear Power Generation Problems in Niigata

The 38th National Symposium on Nuclear Power Generation Problems was held at Niigata University on November 3 - 4, 2018. About 130 persons took part. The main theme is “Nuclear accident verification and restart problems”. While the verification of the Fukushima nuclear accident has not been carried out sufficiently, the restart of the nuclear power plant is being promoted. The symposium has an intention to support the action of residents of Niigata prefecture.

The revelation of TEPCO’s trouble falsification and concealment became a major problem, and the Niigata prefecture established the Technical Committee in 2003 and has been working on nuclear safety issues independently of the government. After the Fukushima nuclear accident, successive governors of Niigata prefecture have stated that the nuclear power cannot be restarted without the inspection and summary, and the Niigata government has continued own verification activities. The Health and Life Committee and the Evacuation Committee were established in 2017, and the Verification Review Committee was established in 2018.

At the beginning of the first day, Mr. Tateishi (Niigata University, ret.), who is a member of the Technical Committee of the prefecture, reported on the Technical Committee's discussions. Next, there were reports on “New standards and conformity assessment issues,” “Debris situation at the Fukushima nuclear power accident,” “Efforts to snuggle up with victims” and “Energy Basic Plan”.

On the second day, Mr. Kobayashi (Niigata University, ret.) looked back about 50 years after the nuclear power plant was attracted to the Niigata prefecture, and reported TEPCO’s bad characteristics and the issue of conformity assessment by the NRA. Other reports on “Decommissioning of reactor and spent fuel”, “US nuclear war potential and nuclear power plant”, “Environmental pollution and disposal site”, “Nuclear water contaminated with nuclear power”, “Renewable energy conversion”, “The current state of Kashiwazaki Kariha nuclear power plant” were presented and a general debate was made. At last, an appeal was adopted calling for “the realization of zero nuclear power and a great transformation to a renewable energy society”.

ACTIVITIES OF RESEARCH COMMITTEES AND GROUPS

The JSA headquarters organizes a number of research committees and groups undertaken on a nationwide scale, which are encouraging the members across the country

TOWARD A TRUE NURSING-CARE SECURITY

The JSA research committee of human rights of old people and impaired persons will publish a book *Toward a true nursing-care security* on March, 2019. For the publishing we have a common thought that, needless to say, we have right to be born as a human being, be grown up, work, and come to the end with dignity.

How about the real situation, however? Solitary death (*kodokushi* in Japanese), suicide, murder in nursing-care facilities, viewing these issues, we find the real world in an unhuman situation. On the other hand, the budget for nursing-care, education, and medical labor which involves life span development as human beings has been drastically reduced for the benefit of a handful of wealthy classes and military buildup. The characteristics of human life has been increasingly deprived.

By the way most of books about nursing-care cover only instruction manual, which takes advantage of anxiety about care. There are also many books offering suggestion for improvements inside the frame of nursing-care insurance system. Above all, there are still scarce books reflecting voices of parties interested in the welfare.

Our book gets together the situations around people enforced to live in a blind spot of social system such as household consisting of the aged, one-old-person household, care for impaired persons and especially cognitively-impaired persons, and in-home care by male. Basing on those facts it discusses what is socialization of nursing-care, and what is its original state. We edited the book with the purpose to clarify the meaning and needs of the care welfare from the viewpoint of the fundamental right and life span development of human beings.

DISTRICTS' AND BRANCHES' ACTIVITIES

The JSA consists of 47 branches which are grouped into 9 districts, and they are independently and/or cooperatively carrying out their activities in addition to the headquarters' ones

1) SEX EDUCATION EMBRACING "SCIENCE, HUMAN RIGHTS, INDEPENDENCE, AND SYMBIOSIS" TOKUSHIMA BRANCH

Sexual issues in our country such as sexual discrimination, overflowing false information of sex, commercialization of sex and attacks and political intervention on sex education from conservative powers, have not departed from chaos.

Recognizing the necessity to think about these problems in our branch, we talked with Onodera Masumi, a former health and physical education teacher and the head of Tokushima Circle of general incorporated association of Study Conference for Education of "Human and Sex", and this lecture meeting became a reality(11/10).

Onodera first exhorted to understand sex scientifically. He pointed out with examples that, in the past, chauvinism was dominant even at schools, and in fact, it still has a high impact, and also the danger of "praising" a self-sacrificing mother as an opposite. He also specifically showed that adults and even parents themselves did not correctly convey sex to their children. Since adults did not receive sex education in the first place, and since they talk shyly and irresponsibly, children fails to understand their

own physical problems correctly, and are liable to amplify their sense of inferiority by comparing with others.

He passionately told that this is dragged even after adulthood, causing mental and physical damage to themselves, and that humans, as animals of endless variety in making the body, are on a par, starting with gender discrimination, there is no scientific ground to justify any discrimination whatsoever.

Though with not many participants, a discussion time was arranged and a student attendant made a remark that he would quit comparing with others. This showed a clear impact of the meeting. I myself thought that I have not been facing the sexual problems correctly and that I have a lot to learn. I asked myself if I could correctly tell my grandchildren this problem properly. This was a meeting that made me deeply think of the need for systematic learning. (Tsunoda Tetsuo)

2) 2018 KINKI DISTRICT SYMPOSIUM “TORRENTIAL RAINFALL AND LANDSLIDE DISASTERS – THEIR CAUSES AND MEASURES” HELD

JSA Kinki district (Kyoto, Shiga, Nara, Osaka, Hyogo, and Wakayama Prefectures) held the above symposium under the auspices of JSA research committee of land problems on December 12, 2018, at Ryukoku University, Kyoto. The executive committee organized four lectures inviting members of the research committee with the theme “torrential rainfall and landslide disasters”, considering disasters occurred in various locations in 2018.

Prof. Ikeda (physiography, geomorphology, cartology) explained the drawing up and usage of hazard maps. Each local government is obligated to make a hazard map (disaster prevention map) and to distribute it to inhabitants. The latest torrential rainfall in Kurashiki City caused a lot of collapse of houses and took a toll on inhabitants, and the magnitude of the disaster was the same as what the 2016 hazard map rendered. Like situation occurred in the Kinugawa river basin, Kanto, in 2015. On the occasion of drawing up, it is important to seize information from inhabitants in various places, and make the map efficacious by incorporating it therein. From the experience to draw up a hazard map at Sizu section of Uji City, Prof. Ikeda stressed a lesson that mutual discussion and intelligence sharing between inhabitants and municipal staff are needed.

Prof. Tainosho (geology) lectured on the landslide, especially mudslide disaster, brought about by torrential rain in the West Japan due to geological and geographical characteristics therein. In the West Japan, in particular, around Hiroshima Prefecture, granites are most widely distributed in Japan, and there are so many places in which steep slope and valley develop along fault. There are also bristle granitic mountainous lands with steep slide, and steep rivers, which prone to give rise to landslide. Since the landslides include larger than 2m diameter rocks, he proposed that they should be called “rock-slides” for purposes of accuracy.

Prof. Nakagawa (river planning) delivered a lecture “A good river flows in a good town – touching on flood damage problem”. Kamogawa River in Kyoto City, flowing in alluvial cone, has been continually improved for preventing flood at the west side of Kyoto, though it now flows near the same place as when the Heian Palace was built. The bounty of groundwater flows under the Kyoto basin, which has formed rich culture and industry involving water like as dyeing and sake brewing. By arranging continuous gradient of the drop the bounty of limpid stream has come to be seen. The

professor finally called attention that rainfall having affect to Kamogawa flood continues from 3 to 4 hours, and recently underground passages, underground shopping mall, and sewerage are necessary to be kept in good condition, and thus a comprehensive measure and its implementation are required.

Prof. Okunishi (geomorphology) delivered a lecture “Causes unfolding of disasters and countermeasures”. In the case of flood disaster caused at Mabi Section of Kunashiki City, the depth of inundation closely resemble the one rendered on the hazard map made by the city office. That indicates the reaction of inhabitants reacted worst to the flood. We need reveal what causes such fragility against flood focusing on the question of the elderly evacuation and make improvement as soon as possible. Especially considering the situation in which population concentrates on the areas estimated deep water in case of a flood and public facilities are built at such places, proposals based on detail analysis are asked. We expect resilient society in which it is possible to pliantly cope with impact of disasters and to exercise flexible ability in the restoration process as well.

In discussion a participant from Hiroshima City reported on a recently occurred flood that the present measures are mainly the response to evacuation after flood, but have weakness in the action to prevent from occurring of disasters. He wishes to carry forward regional construction together with residents through fieldwork using hazard map. A participant from Sendai City claimed that it is valuable to teach children the importance of taking good care of nature, particularly foresting.

3) OCTOBER REGULAR MEETING OF KANSAI COMMITTEE OF PROBLEMS OF ENGINEERS AND SCIENTISTS IN PRIVATE FIRMS: BASICS OF EARTHQUAKE AND NANKAI EARTHQUAKES

Reporter of the regular session, Kunimura, has presented, starting from the birth of the universe initiated with the big bang, inner construction of the earth, basics on earthquake, through plate technics, and explained about Nankai earthquakes. They are the earthquakes of magnitude seven (M7) or greater. Trench investigations, entrenching faults appearing on the ground, have led to important knowledges that the earthquakes do not occur randomly, but at a certain cycle and to the same orientation (active fault). From seismic activities since 2 million years ago, the active faults have formed straight and flat lines, reaching several kilometers and serve as important traffic routes. By the way, difference of 1 M means difference of the strength of 32 times; 2 M difference means 1,000 times. The Nankai trough earthquakes have been caused by Philippine Sea Plate sinking off Tokai-Shikoku at cycles of 100-150 years, seriously damaging the coastal areas with tsunamis. In 72 years since the last Nankai earthquake, it has been announced that the probability of the quake in the coming 30 years is 70-80%. Recently, a giant earthquake of over M9, the movement being coordinated from Tokai, Shikoku, and Taiwan, is assumed to cause casualties of 320,000.

Q&A

* Plate is the crust of about 5 km thickness and lithosphere on top of mantle, and spans about 100 km thickness.

* The isolated flooding spot in Joto district in the east of Uemachi plateau on the hazard map of Osaka pref. is supposed to be caused by tsunami running along Neyagawa River.

* While the fault on the picture of Neo valley is considered to be normal one, there are other faults which are reverse ones.

* The eastern Japan and Hokkaido are considered to be on the North American Plate. However, there are some opinions that the region of Kamchatka peninsula and its west are on the independent Okhotsk or Aleutian Plate.

* Media blackouts were imposed by Japanese military in the Tonankai earthquake (December 1944) and Mikawa earthquake (January 1945). (Masaru Kunimura)

4) THE 29TH CHUGOKU DISTRICT SYMPOSIUM “THE EAST ASIAN SITUATION AND THE CONSTITUTIONAL REVISION ISSUE”

The 29th Chugoku District Symposium was held on November 3rd at Yamaguchi University Faculty of Education with about 80 participants. Five reports and lectures were given on “the East Asian situation and the constitutional revision”.

In the special report, Mitsunori Yoshioka of Yamaguchi Prefecture Peace Committee reported on the subject of “Massive buildup of ‘invasion capability’ and intensifying inconsistencies at the Iwakuni Base” and Yamamura Kenji, a Hagi City farmer and others reported on the subject of “The Self-Defense Force (SDF) Mutsumi exercise ground, a planned site for Aegis Ashore, and the local residents. In both reports the speakers harshly criticized, from the standpoint of local residents, the Iwakuni base and the SDF exercise ground in Hagi with specific examples of anxieties about daily life and harmful effects of bases.

Tamura pointed out health hazard, electromagnetic interference with farm equipment and the stagnation of the younger generation, as reasons for farmers to strongly oppose Aegis Ashore, and called for a movement towards withdrawal of the scheme.

Mashiyama Hitoshi, emeritus professor at Yamaguchi University, commented on the problems of Aegis Ashore as a military weapon.

In academic lecture entitled “Visions and Challenges of Constructing an East Asian Peace Community—Beyond the ‘Threat Theory of China and North Korea’”, Koketsu Atsushi, Professor Emeritus at Yamaguchi University, presented a detailed analysis of the current situation that the Abe administration is rushing straight toward constitutional revision and novel military expansion. The basis of the constitutional revision is the threat theory of China and North Korea spreading among people through the media but it is nothing but an invented threat, he said. He concluded that construction of the Asian Peace Community is the right way to overcome this situation.

Matsubara Yukie, Associate Professor at Yamaguchi University, discussed the issue of the State of Emergency Provision in view of constitutional law under the title of “The problem of adding the state of emergency provision to the Constitution”. According to the working draft for constitutional revision announced by the LDP, state of emergency is depicted as if it were limited to “major earthquakes and other unusual and large-scale disasters”, but the emergency state indicated in the ‘Natural Disaster Countermeasures Basic Law’ is so extensive and vague that it could be easily interpreted as that the true aim is to lead to the creation of “a war-making country”.

In short, if the then administration regards it as “emergency state”, they will be able to halt fundamental human rights to concentrate power on the prime minister and his crony to overtake the Separation of Power of constitutional principle. This could lead to a significant reduction of the Diet’s powers and to a major contraction of the constitutional order, she pointed out.

Nakajima Shigeki, Professor Emeritus at Ritsumeikan University spoke under the title of “What is ‘Abe Politics’ - Authoritative Power System and ‘Targeting Global Military Power’ ”, and pointed out that ‘Abe politics’ is an extension of ‘Ad Hoc Administrative Reform’ of 1980s.

The key point of the Abe administration’s authoritative power system is concentration of power and media control in the prime minister’s office and must be countered based on constitutionalism and democracy, he said.

After the report-and-lecture session, 30 minutes of discussions was held. Many comments were presented from the hall and they provoked an active discussion.

As a whole this symposium took over four hours and was timely event in the wake of crisis of Abe administration’s Constitution change and military buildup.

Finally, I want to thank members of the Yamaguchi Branch of JSA for their devotion in preparing and running the symposium. (Uezono Masatake)

5) HACHIOJI SCIENCE FORUM “THINK RECENT ABNORMAL WEATHER AND DISASTER”

In 2018 summer, the great disaster such as a heavy rain of West Japan, an abnormal high temperature and the visiting of the huge typhoon occurred. In Hachioji area collapse of Tozawa Pass tunnel slope and a bank, and a landslide on the land developed for housing occurred. What is the relation between abnormal weather and global warming? What should we do to prevent a disaster? While the civic interest increased, the forum was planned to make a town which resists a disaster. The participants of the forum were 24.

The first report was “Global warming and abnormal weather” by Dr. Masuda who was the former Meteorological Research Institute general manager. He explained why abnormal weather increases when warming advances by his long study of international level and reported a damage of the urban local heavy rain and Japanese abnormal weather in 2018. In addition, he explained the blocking heavy linear rainfall zone to be formed by the atmospheric vertical instability. At last he emphasized that 30 years are left for effective warming measures, we should make the peaceful sustainable society in which there is no war, no nuclear power generation and the natural energy use.

Next, Mr. Suzuki, a member of the Hachioji City Councilor and Reconstruction Support, Disaster Prevention and Crisis Management Special Committee, reported on "Hachioji's disaster and problems". He explained the history of Hachioji's natural disasters from 1937 to 2017 using slides. Thirty percent of the landslide disaster alert area in Tokyo is in the Hachioji area, many of which are artificially altered land. He also described the proposal to prevent landslides which was submitted to the parliament.

6) FIRST “SCIENCE FORUM” HELD IN KAGOSHIMA

On November 22, 2018 Science Forum (1) was held at Kagoshima University, with the theme “Thinking living from the viewpoint of science, especially chemistry” inviting Prof. Seto as a speaker.

Showing the table of subjects with determinants of responsibility, Prof. Seto noticed that departments of education and psychology place a great weight on subjects in the educational curriculum, not so on professional education. She introduced the contents of the government guidelines for teaching (home economics in primary school, technology and home economics in junior high school), scientific grasp of living not only interests students in living as well as living materials but also is effective to seize faculty of application and imagination by comprehending the meaning of phenomenon. After that she entered into explanation of the actual lecture content, which deals with indigo dye. Indigo is a species of plant, including Chinese indigo, Japanese indigo, Ryukyu indigo, Indian indigo, etc. Many participants found out for the first time that there are so many indigos.

It was deeply impressive that she carefully changed her lecture's contents and method corresponding to listeners from kindergarten till high school. For a class of indigo in kindergarten, she gave a lesson on cultivation and the usage of reaped raw leaves, in which she incorporated dance in case that children grow tired of agitating cloth and staining fluid in a pot. In junior high school students are allowed to take out dyed works in their homes, and in high school she emphasizes the principles of dyeing. Finally returning to teacher training, the professor mentioned that school has a mission to foster persons having knowledge and technology, hoping for substantial education without adhering to the educational philosophy or method of teaching.

7) LECTURE SESSION ON GLOBAL WARMING AND RENEWABLE ENERGY IN SHIGA

The JSA Shiga branch held a lecture and session of Shiga branch at Otsu on December 22nd (Sat), 2018. The lecturer was Hitoshi Kono, professor emeritus University of Hyogo, JSA national secretary, who majors aerography and atmospheric environment on the title "Japan is treasure islands of natural and renewable energies! The contemporary status of utilization of natural energies in advanced countries and Japan's prospect of energy utilization which independent from nuclear and thermal powers."

The lecture delivered: (1) The abnormal phenomena such as concentrated downpour which is frequent recently are attributed to (i) rise of the average temperature of the earth, (ii) changes of westerly waves, and (iii) increase of watery vapor in the atmosphere caused by temperature rise of the oceanic surface, which is notably higher around Japan than global averages. (2) Although countries are trying to achieve goals of 2020, 2030, and 2050, aimed at reducing CO2 emission volumes because the temperature rise is parallel with the CO2 emission volumes, Japan is neglecting such efforts. Although countries are trying to shift from thermal power to natural (renewable) energies, such as hydro, solar, wind, biomass, and geothermal powers, Japan is neglecting such efforts and rates nuclear power as the baseload power source. (3) Examples of utilization of natural energies in EU. (4) Japan also has potential energy sources of solar and wind powers that would suffice most of current power demands but seven of total ten power companies limit 'acceptable supply amount' and suppress the expansion of such energy sources, and explained the inevitability to transfer the energy sources from thermal and nuclear to natural energies, and emphasized the necessities of legal measures and technology development. We also had replete Q&As. It was a timely meaningful lecture session. (Masao Nakamura)