Tiscia (Szeged) Vol. XII, pp. 149 – 154 (1977)

RESEARC INTO THE LIFE OF THE TISZA. CONFERENCE ON TISZA RESEARCH IN 1976

Compiled by

GY. BODROGKÖZY
Department of Botany, Attila József University,
Szeged, Hungary

In 1976, the Conference organized annually was held on 7—8 May. The members of the Tisza-Research Working Committee, at their yearly repeated meetings, in the framework of shoıt lectures, render account of the results of their recent research work. This provides an opportunity for them to compare and harmonize their programmes of work with other themes, in order to carry into effect the complex character of their research work.

Prof. I. HORVÁTH is addressing the participants of the Conference. He makes known that the date of the Conference and the week of the Academic Festival clash, therefore some of the invited guests don't participate in the work of the Conference. In the general meeting of the Academy, the work of the Tisza-Research Working Committee was also analysed and several questions which mediately or immediately touched the work of the Working Committee, were talked over.

He establishes that the basic conception of the more than two decades long Tisza-research work is the direction of enviromental and nature conservation. This work is performed by the researchers with whole-hearted enthusiasm and devotion to science, and in their majority as an unpaid voluntary work.

L. DÁVID also welcoms every participant of the Tisza-Research Conference, on the side of the National Water Office, and also forwards the message sent by the secretary of State. These researches mean a complex investigation into the water-shed area of the Tisza, lying in four countries. They are, therefore, important from international point of view, as well. The work of the Tisza Research Committee is very considerable even from two aspects: from those of conserving the natural environment and of exploring the action mechanism of human interventions.

The National Water Office is in need of assistance primarily in the domain of studying the agricultural pollutions and investigating into the factors affecting the character of the Tisza as a recreation area. He asks for suggestions of development in some of these fields and wishes a good work to the participants of the Conference.

1. I. BANCSI:
   Tasks of the environmental conservation at the Kisköre Reservoir

2. MARGIT ÁDÁMOSI:
   Hidrobiological peculiarities of the Tisza in the time of the longitudinal-section investigations of 1975.

3. P. VÉGVÁRI:

Change in the chemical composition of the Tisza water in the course of the longitudinal-section investigations of 1975

Contributions to the discussion:

I. HORVÁTH: Asks how much the effect of tributaries can be generalized; how important the anthropogenous pollution is.

M. MARIÁN: Considers as very considerable to investigate into the connection between the mass of river float and benthos.

P. VÉGVÁRI: Among the tributaries the Szamos and Maros are the most important. Most deposits are carried by the Szamos. Concerning the extent of human intervention there have been no investigations, as yet. One of the important aims of the floating-matter investigations is to prevent the reservoir from being filled up. He agrees with M. MARIÁN in the problem of benthos.

4. J. HAMAR:

Investigation of the Tisza plankton on the basis of the longitudinal-section investigations of 1975

Contributions to the discussion:

I. HORVÁTH: Asks if they investigated into the connection between water quality and living organisms as well as the interrelations of living organisms.

A. SZITÓ: Asks if they experienced pesticide poisoning in the Tisza and if the expelling of motorboats from the area of the reservoir is to be expected.

M. MARIÁN: Asks if there is an instrument to measure the bacterial number exactly. How reliable the identification of the mentioned Javanese algal species is.

L. MAGYAR: Asks how much the filling up in the area of the reservoir is to be observed. How much the capacity of the Tisza of purify itself is influenced by the reservoir.

MÁRIA HEGEDŰS: It was demonstrated by the bacterial cultural experiments that the total germ number was higher at 20 °C but at 37 °C a bacterial picture reflecting a stronger anthropogenous effect manifested itself.

K. KISS: The plankton-picture of the tropical waters is similar to that of the Tisza. The Javanese alga may have diffused on the whole Earth.

I. KISS: At determining the algae, also the physiological and genetic conditions are to be taken into consideration.

J. HAMAR: Answers that the interrelations asked by Professor HORVÁTH have not been investigated into, as yet. The bacterial count was performed with direct counting and the suitable routine method. The Javanese algal species was determined on the absis of the original description. The reservoir will, unfortunately, reduce the self-purification of the river. A single pesticidal infection was observed. This extirpated the zooplankton almost entirely.

5. I. KISS:

Comparative algological investigation into the dead arms of the Tisza at Mártély and Körtvélyes

Contributions to the discussion:

J. HAMAR: Asks if the observed efflorescence of the Tisza in wooded, bushy places.

I. KISS: Answers that in 1939 he observed algal bloom even in the laboratory simultaneously with that under free conditions. Although it occurs mostly at night, in shady places it can often be observed in the daytime, as well.

6. MÁRIA HEGEDŰS—ENIKŐ FORGÓ:

Hydrobiological investigation into the dead Tisza arm at Mártély

Contributions to the discussion:

I. KISS: He is greeting with joy the long-needed lecture. Apart from nourishing substances, plants need also stimulating substances. Taking this into consideration, the ecological norms were to be changed, as well.

L. GALLÉ, sen.: At Mártély, the water is polluted, making even bathing dangerous. In this, a role is played even by the wrongly laid refuse-water pits. At Kisköre, a larger attention should be paid to this.
J. HAMAR: The conceptions, categories shaped for trophity are not unambiguous.
K. KISS: We should not insist rigidly on the standards in respect of some characteristic signs.
MÁRIA HEGEDŰS: Answers that the state is to be taken as our starting-point which is most unfavourable from the point of view of bathing. The connection of the dead arm with the Tisza would solve several problems. It is difficult to co-ordinate with one another the single categories, standards of water-qualification. There are differences between these, these cannot be left out of consideration because certain measures can only be taken on the basis of these standards.

7. A. SZABÓ:
Zooplankton investigations in the longitudinal section from Tiszabecs up to Tiszalök

Contributions to the discussion:

L. DÁVID: On the basis of the pictures demonstrated, a close correlation with water speed seems to exist. He asks if this was investigated.
J. HAMAR: There are really such correlations. He asks, how much the composition changed in the stretches investigated.
D. GÁL: Water speed is no exclusive key-factor.
P. VÉGVÁRI: Asks if it can be demonstrated that zooplankton was carried by the Szamos.
D. GÁL: The zooplankton picture of the Tisza is somewhat altered by the tributary. This effect can sometimes be demonstrated even 100 to 200 km long.
A. SZABÓ: Answers that the effect of the current of water was not investigated but the strong current is anyway of unfavourable effect on zooplankton. After the inflow of the Szamos the species number was reduced. The zooplankton of the Szamos was diluted by the Tisza.

8. L. GALLÉ:
The lichen-moss vegetation of Tőserdő and its environment.

Contributions to the discussion:

GY. BODROGKÖZY: This was an important, long-needed lecture. In the area the *Convallario-Quercetum* is of a rather fragmental appearance. We may therefore speak of a lichen association, otherwise it would be of synusium-value.
M. MARIAN: Asks what lichenological significance the gray poplar group has.
L. GALLÉ: Answers that certain changes may be expected when the reservoirs are operated as the vapour content is expected to increase. The lichen communities appearing on the stems of trees are generally considered as associations. The white and gray poplars means a similar substartum for lichens.

9. I. HORVÁTH—GY. BODROGKÖZY:
The association conditions of the flat peat-bogs in the flood-plain as a result of a lasting flood in the district of Körtvélyes

Contributions to the discussion:

L. GALLÉ, sen.: Asks if the underground organs of *Baldingera* perish, as well.
K. BÁBA: Asks if the high water has the same effect on both associations.
M. MARIÁN: Asks where the vegetation is resettled from.
GY. BODROGKÖZY: Answers that resettling takes supposedly place by means of seeds. In case of high water, the ground forms are ineffective.

10. A. SZITÓ:
Chirnomida fauna of the Tisza stretch between Tiszafüred and Kisköre, on the basis of the investigations in the years 1974—1975

Contributions to the discussion:

J. HAMAR: Regards the results very valuable also for the Kisköre Laboratory. They have not experienced any toxic pollution. The probability of that is, therefora, not very high.
K. BÁBA: Asks if the establishment of the individual number took place on the basis of samples of identical number.
M. MARIÁN: Asks how much the quantity of Chironomidae was influenced by mud thickness.
I. BANCSI: Asks if the flood of 1974 could exert any effect.
A. SZITÓ: Answers that apart from the toxic pollution he cannot find any real cause for a so strong reduction in the individual number. He performed the investigations with the same method all the time. The thickness of mud does not mean any problem in so far as a thickening of mud is in question.

11. M. MARIÁN:
The effect of floods on the Amphibia-Reptilia fauna living in the flood-plain of the Tisza and on its regeneration

Contributions to the discussion:

J. HAMAR: Asks if the Amphibia can get an important role in the traffic of materials in a reservoir. And if it is worth introducing there certain species.
M. MARIÁN: Answers that their role in the insect consumption is very considerable. On the basis of the points of view of nature conservation, we should think on introducing certain species.

12. L. MAGYAR:
The role of artificial nesting boxes in winter in the aspen plantation of the flood-plain of the Tisza-stretch at Körtvélyes

Contributions to the discussion:

M. MARIÁN: The wood cement box is very ingenious. But he asks whether the drop shutter does not frighten birds. The number of nidatory birds is in case of night birds much lower (1/3),: it is not too encouraging. Trapping and removing of sparrows seems to be very useful.
A. SZITÓ: Asks if ringing means any disturbance.
L. MAGYAR: Answers that they did not observed any strong alarming effect in case of dropshutter. The effect of ringing depends upon the way of trapping.

13. K. KISS—A. SZABÓ:
Effect of purified sewerage waters on the water quality of the Tisza

Contributions to the discussion:

P. VÉGVÁRI: Asks whether, instead of the process applied, it would not be more practicable to lay out a lake.
I. HORVÁTH: The introduction of reed is very difficult. He asks if this influences the results of the methods of water purifying unfavourably.
MÁRIA HEGEDŰS: Cleansing with aeration is also necessary.
J. HAMAR: The initiation is remarkable.
M. MARIÁN: Asks if these lakes cleanse the total waste-water of the factory.
A. SZITÓ: The area is not large enough for the quantity of waste-water. He asks, how fishes tolerated this water.
I. HORVÁTH: As a biological method, this is at any rate advantageous.
K. KISS: Answers that the water getting into the lakes cannot officially be considered as polluted. The introduction took place, in case of the reedy lake", with bulrush. The water getting into the lakes is already aerated. Are the waters administered duly, then the extent of cleaning is sufficient.
A. SZABÓ: Answers that they have only observed fish destruction as a result of wrong transport.

14. I. Lőrincz:

Suggestion to form flood-plain shelter forests, with special regard to preserving the Tisza-landscape and its living world

Contributions to the discussion:

I. Horváth: This proposal would, of course, not touch the nature conservation districts. It would be worth while to elaborate some alternative introductions in the form of proposals. He asks if the application of stalk crusher is sufficient.

M. Marián: Is suggesting that the material of the lecture should be given in the form of a proposal to the Tisza-Research Working Committee for sending it to the National Water Office.

J. Hamar: Asks what kind of introduction is to be applied in case of a broader flood-plain.

Gy. Bodrogközy: In flood-plains of high relief we had to make experiments with hardwood groves. A due selection of the shrub stratum is very important.

K. Bába: Asks what kind of forests would get immediately to the riverside of the Tisza.

I. Lőrincz: Answers that the nature conservation districts are not touched by the settling plan. The application of the stalk crusher is sufficient.

I. Beliczay: Mentions, as a completion, that the disposition is not sufficient concerning broader flood-plains. It is frequent that Summer perishes in deeper lying basins.

15. Mária Csoknya—Katalin Halasy:

Light- and electron-microscopical investigations into the respiratory apparatus of the may-fly *(Palingenia longicuada)*

Contributions to the discussion:

Academician A. Ábrahám: In this University, three research workers have so far dealt with *Palingenia.* The histological research of the species is at present in good hanks. He asks if they have found nerves in the sensillae.

Mária Csoknya: In her answer thands for the supporting words. They did find a nerve but no typical synapse.

16. Aranka Stammer—I. Horváth:

Pollution-induced cytologic changes in the respiratory apparatus of the bony fishes (Teleostei) in the Tisza

Contributions to the discussion:

Academician A. Ábrahám: Asks what kind of fishes were investigated. The way of posing the problem is interesting. We had better to investigate the problem in strongly polluted waters. The lecture is a fine example of how the basic researches can be applicable in practice, as well.

I. Horváth: Asks if it is possible to apply morphological indices as indicators.

M. Marián: Is greating the lecture with joy. He asks if the authors have used other pollutants and if they examined amphibious larvae, as well.

P. Végvári: Asks if with these methods a conclusion can be drawn in respect to the pollutant.

Mária Hegedűs: Asks if the herbicide-induced pollutions can be demonstrated ultrastructurally.

A. Szitó: Felicitates, from the side of HAKI, upon the results.

Aranka Stammer: Answers that the investigations were performed on *Abramus, Carassius, Cyprinus, Pelecus* species. Having no apparatus that works routinish with electron microscope, they could not solve the systematical sample evaluation. At present, they have no results about herbicides, as yet. They are going to carry out these investigations further on. The morphologic-structrual changes may be applied to indicate pollution in a very simple way.

17. R. Vámos:

Identical factors of the fish destructions in certain Tisza dead arms and the Balaton

Contributions to the discussion:

Mária Hegedűs: Is comparing the processes of fish destruction in the Lake Palics to those reported on in the lectures.

K. KISS: Opposite to the hydrogen-injury, he holds as more probable the diatom-frame induced gill-injury.
A. SZITÓ J. HAMAR: Attribute the fish-gill injury to the complex effect of diatoms and hydrogen sulphide.
R. VÁMOS: Answers that the has not dealt with the damaging effect of diatoms, therefore, in this connection, he does not want to express any opinion.

18. R. VÁMOS:
Paralytic destruction of the mallard *(Anas platyrhynchos)* in the Tisza dead arm at Gyála.

19. GY. CSIZMAZIA:
A summary of the data of distribution of the Mammalia living in the flood-plains of the Tisza stretch in Hungary.
(In absence of the author, the lecture was delivered by M. MARIÁN.*)*

Contributions to the discussion:

L. MÓCZÁR: The basis of the ecofaunistics is the identification of species. He asks if the author performed quantitative investigations.
M. MARIÁN: The author has several quantitative data.

20. M. MARIÁN:
Results of the Tisza-research in 1975 and its tasks in 1976.

Presidential concluding words

After the lectures, I. HORVÁTH sums up the results of the Conference. He establishes that the Conference was successful. Several concrete suggestions were heard. It is proved by the lectures and contributions that the research plan is good, the emphasized domains are topical, the research work is to be increased, mainly in the Tisza stretch at Csongrád. The range of research grew wider. The electron-microscopical investigations are also taken up.