

The INQUA Loess Commission as a Central European Enterprise

Review Article

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Abstract: The International Union of Quaternary Research (INQUA) organized the study and consideration of the Quaternary Period (the last 2.6 million years in Earth's history) via a set of commissions, sub-commissions, working groups, projects and programmes. One of the most successful and best records was the Loess Commission (LC) which functioned as sub-commission and then commission from 1961 to 2003, resulting in 40 years of useful activity. The history of the LC can be divided into three phases: 1, from 1961-1977 when the President was Julius Fink; 2, from 1977-1991, with President Marton Pecsí; 3, from 1991-2003 with Presidents An Zhi-Sheng and Ian Smalley.

Fink, from Vienna, and Pecsí, from Budapest, gave the LC a distinctly Central European aspect. The nature of loess in Central Europe influenced the nature of the LC but the settings for phases 1 and 2 were quite distinct. Phase 1 was a small scale academic operation, carried out in German. As phase 2 began in 1977 the scope expanded and Central Europe became a base for worldwide loess studies. where the LC language changed to English. Phase 2 was run from a National Geographical Institute and demonstrated a different approach to loess research, although the basic programmes of continent-wide mapping and stratigraphy remained the same. The Commission benefited from this change of style and emphasis. In phase 3 the administration moved away from Central Europe but the Finkian ethos remained solid.

Keywords: Loess Commission • Central European loess • loess history • Julius Fink • Marton Pecsí

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*"The real voyage of discovery consists
not in seeking new landscapes but in
having new eyes."*

Marcel Proust

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1. Introduction

It could be claimed that European loess research started in the heart of the continent, possibly via the studies of Italian scholar and soldier Luigi Ferdinando Marsigli [1]. He described noticeable loess-palaeosol exposures along the Danube river valley in his outstanding six volume work

Danubius Pannonico Mysicus [2, 3]. Since his time some of the most important loess investigations have been carried out in this Central European region, although his pioneering efforts did not produce any immediate response. Organised investigation into the Central European loess essentially began with the development of the Loess Commission of the International Union of Quaternary Research INQUA, and with the activities of Julius Fink of the University of Vienna.

In 1961, the 6th INQUA Congress was held in Poland at Warsaw and Lublin. Fink organised a loess session and set up the sub-commission of European loess stratigraphy as a sub-commission within the INQUA Stratigraphy Commission. It is worth noting that it was at the loess symposium that Liu Tung-sheng presented the paper which demonstrated the multiplicity of palaeosols in the Chinese loess, an act which initiated modern loess stratigraphy and demonstrated, for the first time, the complexity of the Quaternary period. Liu set in motion modern loess stratigraphy and, thus, Fink took the first steps towards the formation of the Loess Commission. The initial composition of the LC consisted of a president, a secretary, and ten full members, including President: J.Fink (Austria), Secretary: O. Franzle (W. Germany), and Members: K. Brunnacker (W. Germany), E. Fotakiewa (Bulgaria), B. Frenzel (W. Germany), G. Haase (DDR), I.K. Ivanova (USSR), I. Lieberoth (DDR), V. Ložek (Czechoslovakia), J. Markovic-Marjanovic (Yugoslavia), E. Mojski (Poland), A.A. Velichko (USSR). This is a distinctly Central European group, which provided the initial impetus. It eventually united loess scholars across Europe (and later on, throughout the world). The aims were organizational: along with creation of an ambitious map which would show loess deposits across Europe, there were correlations to be made between interesting deposits in various countries and there was a generalised contribution to Quaternary scholarship. G.Haase in Leipzig took on responsibility for preparing the map, which proved to be a huge task and was only recently completed in 2008 [4].

The time of the LC can be divided into three very distinct phases. Phase 1 is when Fink was president and the main activity was an annual field meeting in one of the participating countries. This might be described as an academic period where a relatively small group of involved scholars worked to provide correlations between the various loess deposits of Europe. It was essentially self-contained and relatively local, with well-defined local aims.

Phase 2 started in 1977. At the 10th INQUA Congress in Birmingham, Fink handed the LC presidency over to Marton Pecsí of the Hungarian Academy of Sciences and a new policy was announced. Fink and Pecsí (Figure 1) had obviously been preparing for the transition for some-

time and there was a smooth transition. The new policies were, in effect, a widening of the horizons, both in terms of geography and topic. There was to be some new emphasis on practical engineering problems, and on loess deposits outside Europe.

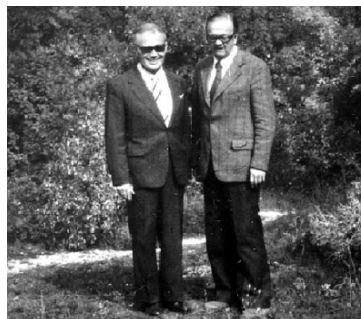


Figure 1. Márton Pécsi and Julius Fink, founders of INQUA Loess (sub)commission (<http://www.mtafk.hu/kepek/pic23.jpg>).

Phase 3 started in 1991 at the 13th INQUA Congress in Beijing where Pecsí handed the presidency over to An Zhi-sheng of the Chinese Academy of Sciences; Ian Smalley became secretary. Phase 3 was essentially a time of consolidation and documentation and carried the LC up to the time of the large-scale re-organisation of INQUA in 2003, when all the old commissions were swept away and a new bureaucracy established.

2. Phase 1: Julius Fink: 1961-1977

In 1961 Fink organised the loess meeting at the 6th INQUA in Poland. He organised the beginning of the sub-commission on European Loess Stratigraphy of the Loess Commission of INQUA and was quite clear in his targets: he wanted a continent-wide study of loess, which would be complemented by a detailed map. He also wished to establish continent-wide correlations with a comprehensive European loess stratigraphy. His chosen method was an annual series of field meetings and discussions, with major reports delivered at the main INQUA Congresses every four years. A timetable shows how operations were conducted during Phase 1.

Phase 1 timetable (based on Fink [5]):

1961 6th INQUA Warsaw-Lublin; Loess Symposium; Sub-Commission on European Loess Stratigraphy established

1962 31 May- 3 June Austria EuG 15, 229-235, 1964

1963 22 Aug.- 28 Aug. Czechoslovakia

- 1964 1 April- 4 April DDR EuG 16, 264-275, 1965
- 1965 7th INQUA Denver v.12 Proc. 247, 281-369; a major report published in vol.12 of Proceedings- a detailed survey of European loess stratigraphy.
- 1966 6 Sept.- 10 Sept. Yugoslavia EuG 19, 289-300, 1968
- 1967 29 Aug.- 3 Sept. Belgium
- 1969 8th INQUA Paris Suppl. Bull.AFEQ 176p [6]
- This was a critical year, as not only was the Loess Sub-commission upgraded to full Loess Commission but a major publication resulted. The Supplement to the AFEQ Bulletin gave details of loess research in Europe and listed all the sites of interest. Over 100 sites were listed, from England in the west to the western parts of the Soviet Union in the east. This Supplement is difficult to reference; it appears on the reference list as AFEQ (1969). (AFEQ is Association Francaise pour l'etude du Quaternaire) [6].
- 1970 9 Sept.- 21 Sept. Bulgaria EuG 23/24, 415-426, 1973
- 1971 8 Aug.- 19 Aug. AGASH 16, 1972 Hungary (Figure 2)
- 1972 9 Sept.- 15 Sept. Rumania
- 1973 9th INQUA Christchurch
- 1974 9 Sept.- 20 Sept. W. Germany EuG 27, 220-235, 1976
- 1975 9 Sept.- 19 Sept. France
- 1976 5 Oct.- 10 Oct. Ukraine-Moldovia
- 1977 10th INQUA Birmingham Nature 270, 300, 1977

The 1977 INQUA meeting in Birmingham brought Phase 1 to an end. An examination of the timetable shows very clearly the nature of the sub-commission/commission activity, where the members and associates gathered each year to examine relevant loess deposits and observations made allowed correlations to be identified. Fink reported punctiliously in *Eiszeitalter und Gegenwart* and recorded the conclusions reached by the group. It was classic working group activity and it was either very successful in raising interest in loess across Europe and demonstrating some attractive and informative loess sections; or it was essentially a failure in that no real progress was made on the important map where no settled trans-continental stratigraphy was agreed upon.

In retrospect it can be seen that Fink's sub-commission grew into one of the more successful and long-lasting INQUA Commissions which had many substantial successes, but it is hard to know whether this is what Fink intended or wanted.

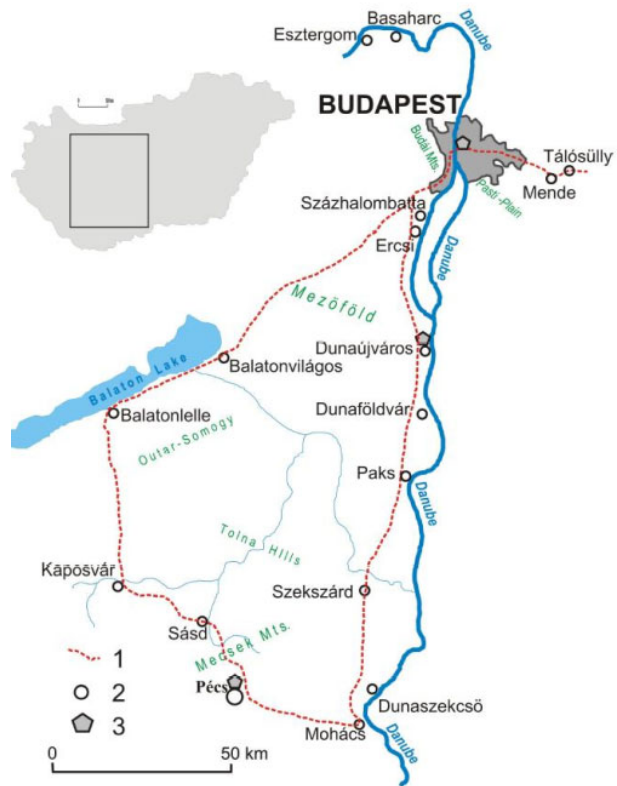


Figure 2. The key map of the International Loess Symposium, Hungary 1971 (19, modified).
Legend:
1. Excursion route; 2. Stop points; 3. Night's lodging.

3. Phase 2: Marton Pecs: 1977-1991

In retrospect the switch of presidency from Fink to Pecs can be seen as a very significant change. The whole nature of the commission changed, in a way which was not immediately apparent. The stated changes were towards a more international scope, and towards the inclusion of more disciplines: an international commission operating in all loess countries and looking at all disciplines. The basic aims were still embedded in the fabric. A timetable for Phase 2 is seen below:

- 1977 10th INQUA Birmingham. Not only is the new LC policy adopted but the Western Pacific Working Group comes into being- a large first step towards the internationalization of the commission. Jim Bowler of Australian National University takes responsibility for setting up the WPWG.

1978

- 1979 26 Aug.-31 Aug. Hungary: International Loess Meeting. *Studies on Loess* [7]
Jan. Australia & New Zealand Society for the Advancement of Science meeting in Auckland- WPWG programme established. *Loess Letter* launched; no.1 April 1979
- 1980 First WPWG field meeting; in S.E.Australia. Liu Tungsheng, Wu Zi-rong, Yuan Bao-yin, Zheng Hong-han, An Zhi-sheng, Wen Qi-zhong visit from China.
- 1981
- 1982 11th INQUA Moscow. Symposium on Lithology and stratigraphy of Loess and Paleosols [8]
- 1983
- 1984
- 1985 A year of loess, so described by Henryk Maruszczak [9] in Lublin. He wrote of "a greater popularity of studies on loesses" and cited the session on loess at the 1st International Conference on Geomorphology in England, and the International Symposium on Loess research in China. The China meeting was the 2nd part of the WPWG programme and was a large scale international gathering.
- 1986
- 1987 12th INQUA Ottawa. WPWG Loess Symposium in New Zealand 13 Feb.-21 Feb. *Loess Inform#1* Geotechnical Working Group reports (see [10]).
- 1988
- 1989
- 1990
- 1991 13th INQUA Beijing. contained the most loess-focused papers of the INQUA Congresses; over 200 papers from the whole loess world- a mighty culmination of Phase 2. (see [11]).

Loess research grows more popular and widespread, and more disciplines are involved. The Phase 2 timetable shows a dramatic increase in world-wide loess activity, with the LC heavily involved. There is a dramatic peak in 1985 when the Chinese convert the 2nd meeting of the WPWG into a major international conference; and a remarkable climax at the 13th INQUA Congress in Beijing when loess dominates the programme and over 200 loess

papers are offered (for some abstracts see *Loess Letter* 26 and *Loess Letter Supplement* 24).

The LC is still firmly based in Central Europe but loessic activity is definitely world-wide.

4. Commentary

Fink wrote in a letter circulated to LC members and associates (dated Vienna 8 July 1976):

"Here are the arguments for discontinuing our activities at the forthcoming INQUA Congress". (This was Birmingham 1977).

1. In European countries late Pleistocene loess series have been successfully dated by means of stratigraphy. The results were published in the joint paper presented at the Paris congress of INQUA (AFEQ 1969) [6].
2. Many aspects and objectives aimed for by our Commission have been included in the research work of a number of other INQUA commissions and a series of similar international schemes, (e.g., the International Geological Correlation Programme and its projects). Continuing our activities would only mean overlapping, which in turn would merely cost the members on the Commission a great deal of extra time.
3. The statutes and bye-laws of INQUA, which were carried by vote at the Christchurch congress, compel almost all of the very active members on the Commission of Loess to leave it by the beginning of the next INQUA period. As a result, work would not go on continually.

Fink was describing the shutting down of a small investigation strictly within INQUA guidelines which had run its allotted course. In 1977 a sea change occurred and although this small investigation was to all intents and purposes closed, a new larger enterprise immediately grew from it. It represented a change of approach for an INQUA Commission from what was a very detailed project oriented activity to a more sweeping interest to loess in general or, a great move from particular to general, which was to some extent reversed in the large scale reorganisation of 2003. Phase 2 promoted interest in research on loess: in every country in the world and in every scientific discipline. It also, incidentally, promoted Quaternary research in Hungary, and the fortunes of the Geographical Research Institute of the Hungarian Academy of Sciences. In Phase 2 the loess business remained a Central European enterprise. It was in the Hungarian interest to expand and continue LC activity.

Table 1. Comparison between 1st and 2nd phase of INQUA Loess (sub)commission development.

	Phase 1	Phase 2
Research topics	Stratigraphy and mapping	All aspects of loess research
Area	Europe	Whole world
Language	German	English
Organisation	Pure scholars	Research group
Newsletters	Rundschreiben	LoessInform + LoessLetter
Conferences	annual meeting	International conferences
Field trips	Europe	Europe, Asia, Australia

Phase 3 benefited from the activity of phase 2 and contained several major loess events, in particular the LoessFest meeting in Heidelberg and Bonn and the NATO sponsored Collapsing Soils meeting in Loughborough [13] and the Climactic Loess in Eurasia meeting in Moscow [14].

5. The Central European milieu in 2009

Hungary is essentially a sedimentary basin. Loess is important in Hungary; probably more important than in many other loess countries. The work of the Geographical Institute of the Academy of Sciences was performed concerned with loess, given that loessic problems (e.g. landslides) could be national problems. By the agency of loess, Hungarian scholars could have significant international impact. The geological structure of a country must have a direct influence on the earth science research which is carried out in that country. It was no accident that the British Isles with a range of accessible rocks from Precambrian to Holocene should have been a site for pioneering work in geology. One would expect a loess rich country like Hungary to be a focus for Quaternary research, particularly if few alternatives were available.

Perhaps Central Europe is dominated not by basins but by confluences. Perhaps Central Europe is such a rich loess region because of a confluence, or several confluences, or many confluences. Smalley et al [15] have argued that rivers are critical for loess deposit formation, and that rivers have a critical determining role in the formation and disposition of loess deposits. Rivers deliver the loess material across the landscape and control the essential place of deposit formation. If this is true then a place with confluences of many major rivers is a likely treasure house of loess. This is Central Europe, a place of many confluences, and place of loess for further

investigation (and utilization). The great confluences of Inn and Danube, of Sava and Danube, of Drava and Danube, of Tisza and Danube determine the nature of Central Europe. The river systems have made Central Europe a special loess place and they deliver landscape facts that need to be recorded and investigated. As Claudio Magris said in 'Danubio' [16]:

"Ma rimane, per fortuna, l'avventura della classificazione e del diagramma, la seduzione metodologica..."

"But luckily we are left with the adventure of classification, the thrill of diagrams, the allure of methodology..."

Danubio/ Danube

Actually what Magris said is only partially true as there is much tidying, recording, assessing and displaying to be done in the world of the Central European loess. However, there are many real research initiatives to be followed, and much science to be done. It appears that Central Europe is a borderland between the Danubian loess and the USWR (Ukraine South West Russia) loess associated with the Dnepr, Don and Volga rivers. The essential duality of this region was pointed out by Smalley et al [15] but some recent key observations have been made by Buggle et al [17] who investigated the geochemical evidence for the sources of the loess material in Central Europe. Here, for example, is a major research theme: investigations of the geochemistry of the loess material in Central Europe to determine its origins and sedimentological history. Another major research theme includes geotechnical investigations of the properties of Central European loess, particularly from the point of view of landslide dynamics, and suitability for use as waste repositories. Technology continues to develop. Fink's indication that dating/stratigraphy investigations were completed for the Upper Pleistocene of the Central European loess looks a bit like the nineteenth century physicists claiming that physics was over and that all had been discovered. The increased precision of modern stratigraphy means that there is a vast amount of life left in the original formulation of the sub-commission targets, and the mapping has certainly only reached an intermediate stage.

Fink did remark, in discussing the 1966 meeting organised by J. Markovic-Marjanovic (Figure 3), that future research might be aimed at the stratification and correlation of the Middle and Lower Pleistocene. He identified as particular regions for research the deposits on the edge of the Fruska Gora and on the Titel Plateau, a perfect Central European focus. Fink was very perceptive in setting up a Commission to study loess, as it was a good subject for

an INQUA



Figure 3. Jelena Marjanovic-Markovic, pioneer of loess research in former Yugoslavia.

Commission with a focus on material rather than process or location, bringing together a disparate group of scholars for their mutual benefit. The Loess Commission was a well placed Commission; INQUA was probably mistaken in abolishing it in 2003 [18] as loess research since has been diminished by this unwise decision.

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