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LAUDATIO

Tribute to Rudolf Trümpy concerning awarding of the Steinmann Medal

The "Geologische Vereinigung" decided to award the Gustav Steinmann Medal to Rudolf Trümpy, Emeritus Professor at the "Eidgenössische Technische Hochschule Zürich," on the occasion of their annual meeting in Bern, 27 February 1998. Needless to say, I share the excitement concerning this good news with my former teacher Rudolf Trümpy, who expressed his great joy when I had the privilege to inform him about the decision of the Geologische Vereinigung.

Surely, there are several good reasons why the Medal Committee chose to include Trümpy amongst the illustrious group of Gustav Steinmann Medallists. Given the international influence the Geologische Vereinigung traditionally has, undoubtedly one of the main reasons is Trümpy's great impact on the international scientific community.

Firstly, this impact has very much to do with numerous outstanding scientific publications which have successfully attempted to convince the extra-alpine geologist that the Alps might not easily fit into one of the currently accepted models of collision belts. Rudolf Trümpy fully realized that it must be difficult for an extra-alpine geologist to understand his and his colleagues' concern about the relevant details. Consequently, he condensed his virtually encyclopedic knowledge about the evolution of the Alps into fascinating syntheses which addressed fundamental problems of paleogeography and orogeny, always aware that hypotheses are not meant to represent ultimate solutions but rather serve to ask pertinent questions of general interest.

Secondly, Trümpy's impact also derives from his very successful career within the International Union of Geological Sciences, culminating in his presidency in the late 1970s. This career move was a logical maneuver in his continuing effort to communicate across national boundaries.

Lastly, I am also convinced that his fame has much to do with his outstanding and eloquent talks in front of international audiences, be it in fluent German, French, or English. Those of us who had the opportunity to enjoy him as an excursion guide or as a lecturer immediately became conscious that they were listening to an exceptional personality, an expert with a broad cultural background and a natural authority. Moreover, his oral presentations, exposing a brilliant account of the state-of-the-art in scientific knowledge, never lack proof of his fine sense of humor. Numerous historical anecdotes are unforgettable to many of us. Fortunately, they have been incorporated in a series of papers Trümpy wrote and still writes about the history of our science.

Rudolf Trümpy was born in 1921 in the small town of Glarus, situated in the midst of a spectacular scenery of Helvetic nappes. Being the son of a geologist he found two contrasting key books in the parental library which must have profoundly influenced his future career: Oberholzer's "Geologie der Glarneralpen" and Alfred Wegener's "Entstehung der Kontinente und Ozeane." Oberholzer's work, based on solid field work, led him to first carefully observe and map in his native mountains, thus laying the foundation to his life-long interest in Alpine Geology. Wegener, on the other hand, laid the foundation for his mobilistic vision of

paleotectonics and orogeny, making him a pre-plate-tectonics advocate of continental drift.

In the late 1940s Trümpy graduated from the ETH Zürich with a thesis that bore the unspectacular title "Der Lias der Glarner Alpen." Primarily aimed at unraveling stratigraphy, this work led to the detection of synsedimentary normal faults, only later interpreted as being related to passive continental margin formation. At this time the discovery of extensional tectonics was in sharp contrast to Argands idea of "geanticlines", i.e. early ("embryonic") manifestations of crustal shortening in a "geosyncline". He concluded "Es ist eine Art antithetischer Bruchschollentreppe, in der das alemannische Land zu den Tiefen der Tethys absteigt" (Trümpy 1949).

From 1947 to 1953 Trümpy spent his post-doctoral years in Lausanne. These years were decisive for two reasons. On the one hand, he married Marianne Landry who deserves our admiration. All of those who know Rudolf Trümpy and his wife are aware of the fact that Mrs. Trümpy has always been very interested in the work of her husband and has been a beacon of patience and love. Also since the years in Lausanne she has always been a wonderful hostess to her geological guests, be it friends, international celebrities, or students. On the other hand, Trümpy expanded his research interest to other paleogeographical domains and tectonic units in western Switzerland and adjacent France during these years (zone Houillère, Valaisan, Helvetic and Ultrahelvetic units, Préalpes du Chablais, and the molasse conglomerates of Mont-Pélerin). This, and the close personal contacts with young French geologists such as Ellenberger, Debelmas, Lemoine, and Ricour, enabled him to rapidly gain insight into a large portion of the alpine chain. Among other things, he clarified a long-standing controversy between French and Swiss geologists regarding the paleogeographic position of the Préalpes in favor of his French collegues. Shortly after being appointed professor at ETH Zürich he wrote in 1953: "La nappe des Préalpes médianes semble provenir du domaine subbriançonnais interne – brianconnais externe" and was the first to propose "un domaine valaisan, évolution paléographique indépendante" (Trümpy 1955).

The above-quoted 1953 publication was but a first step toward what many of us consider his masterpiece, namely his "Paleotectonic evolution of the Central and Western Alps" (Trümpy 1960). Typically, it was Trümpy's close international ties which led him to embark on writing a major review on Alpine paleotectonics. He was particularly encouraged by his American collegues John Rogers and Preston Cloud to do so. At the time this article served as a substitute for a textbook and it continues to be used as a reference text by many of us. Blunt statements such as "Argand's stimulating embryotectonic theory of the evolution of the geosyncline is outlined and rejected," or "There is no simple relationship between rises inside the Mesozoic geosyncline and Tertiary (or Late Cretaceous) nappe structures" are far from being fully absorbed by the scientific community up to the present day. In the Alps, and elsewhere, we are still hampered with obsolete terminology which makes no distinction between paleogeographical domains and structural units, and consequently, we are often tempted to carry cylindricity too far. In order to avoid the impression that Trümpy might merely be a specialist on Alpine geology, although a great one, it is worth mentioning that in the 1950s and 1960s he published papers on extra-Alpine regions such as Greenland, the Montagne Noire, and the Sahara. In 1968 he additionally ventured to write a remarkable essay on Goethe's geognostic ideas which was not well received among many of Goethe's scholars. Understandably so, since he concluded (Trümpy 1968): "Goethe hat etwas Unmögliches versucht: er wollte eine humane Geognosie schaffen, ein geologisches Weltbild, in welchem kein Platz war für gewaltige Umwälzungen, kein Platz für alles Destruktive...".

Despite his lifelong mobilistic convictions inspired by Wegener's and Argand's pioneering works, Trümpy was not among the first Alpine geologists to embrace plate tectonics theory. This clearly had to do with the fact that he took field evidence extremely seriously, evidence which initially seemed to contradict the new theory. It is typical for Trümpy's skeptical attitude toward working hypotheses that this new theory (by now of course more than a working hypothesis) fostered his study of the geology around the Strait of Gibraltar. He found it impossible to place a major plate boundary through Gibraltar, and consequently he led a mapping campaign with a team of graduate students. In the late 1960s he wrote a remarkable paper (Trümpy 1969) on the palinspastic and kinematic reconstruction of the Glarus nappes, a paper which has probably not received the attention it deserves. It represents a splendid example of how a precise palinspastic map should be constructed, namely based on a series of palinspastic profiles attempted and retrodeformation of nappe structures. Also, his introductory remarks on the nappe concept in general are extremely worth reading. He insists on the necessity of being guided by geometrical (i.e., structural) as well as facies correlations, pointing out possible shortcomings of both methods. He also warns against an unwarranted negative attitude toward nappe correlations which may have resulted from his and other geologists criticism regarding excessive use of cylindrism: "Die Alpen sind kein regelmässiger Körper, sie sind aber auch kein Chaos."

During the 1970s and early 1980s Trümpy reached the climax of his scientific career. During this period he not only acted as president of the International Union of Geological Sciences, but he also managed to write another series of synthetic papers which very much influenced all of us who are interested in paleotectonics and orogeny. In 1973 Trümpy established a first version of what he calls an "orogenic timetable." He came to the conclusion that movements involving crustal shortening have been "spasmodic rather than continuous."

He writes that "When the author set out to gather information on the timing of orogenic events he started as a convinced Gillulyan; to his own surprise, he has ended up as a moderate Stillean" (Trümpy 1973).

Today we know that the contractions between continuous plate movements and the episodic nature of orogeny are only apparent. It became more and more obvious to most alpine geologists that at least the Eoalpine (Cretaceous) orogeny has to be clearly separated from Tertiary orogeny, and that the Meso- and Neoalpine periods definitely represent distinct stages of Tertiary shortening.

Rudolf Trümpy's 1975 paper on the Penninic–Austroalpine boundary in eastern Switzerland is another example of his careful analysis of field data. He "consciously avoided fitting the Alps into one of the accepted models of collision belts" (Trümpy 1975). His skepticism against oversimplifications does not mean he abstained from postulating large-scale working hypotheses himself, but he entitles the last chapter of a fascinating hypothesis paper of his: "De la ńecessité de rêver" (Trümpy 1976). The concept of a Cretaceous-age sinistral strike-slip zone, extending from the Pyrenees to the Alps, has been re-proposed by several authors up to the present day. Strike-slip movements became unavoidable for Trümpy who well remembered what a wise Greek philosopher said: "Où devions-nous rechercher I'origine de la nappe de Ia Simme, puisque Aristote nous avait enseigné qu'un seul objet ne saurait se trouver, au même temps, en deux endroits différents." How he managed to write his book "Geology of Switzerland" (Trümpy 1980) during the hectic times of his presidency of lUGS remains a mystery to me. Anyway, although written under the pressure of demanding deadlines due to the forthcoming excursions organized by the 1980 Geological Congress in Paris, his text still is the best modern treatise on the Geology of Switzerland available up to the present time.

During his last years at ETH (until 1986) and thereafter Trümpy produced another series of remarkable papers. Among those I first mention a joint paper with one of his French collegues he had close ties with since the Lausanne days (Lemoine and Trümpy 1987). The two authors directly compare passive margin formation on both sides of the Alpine Tethys. All those interested in gaining an overview of the entire Alpine chain will find an inspiring synthesis in Trümpy (1988), dicussing Alpine transects between Savoy and Slovakia, and once again pointing out that "we must abandon the cylindristic concept of parallel facies belts". Trümpy (1992) offers an inspiring and highly mobilistic discussion of the boundary region between western and eastern Alps, emphasizing that large parts of the Penninic and Austroalpine tectonic units are incoherent and, in this sense, represent terranes: "Terranes" sind in diesem Sinn kaum etwas anderes als unsere altgewohnten "Faziesbereiche", soweit sie sich auf inkohärente Einheiten beziehen" (Trümpy 1992).

Dear Rudolf, I hope you forgive me for my biased choice of selected references. I just felt it appropriate to honor your outstanding contributions by drawing additional attention to some of your own words. We are grateful for the stimulus you have been giving us, particularly in revealing intimate interdependencies between stratigraphy and mountain building. You have not only achieved this through your papers, but also by your talks, your unforgettable excursions, your lively and critical discussions, and last but not least, by your considering the teaching of students to be a very important task. We also thank you for your continuous effort in promoting international relations among geologists. We sincerely hope that you will continue writing on geology and its history as a science.

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References

Lemoine M, Trümpy R (1987) Pre-oceanic rifting in the Alps. Tectonophysics 133:305–320

Trümpy R (1949) Der Lias der Glarner Alpen. Denkschriften Schweiz. Naturforsch Gesellschaft 79:1–192

Trümpy R (1955) Remarques sur la corrélation des unités penniques externes entre la Savoie et le Valais et sur l'origine des nappes préalpines. Bull Soc Géol France 5:217–231

Trümpy R (1960) Paleotectonic evolution of the Central and Western Alps. Bull Geol Soc Am 71:843–908

Trümpy R (1968) Goethes geognostisches Weltbild. ETH Kultur- und Staatswissenschaftliche Schriften, Heft 127, 37 pp

Trümpy (1969) Die helvetischen Decken der Ostschweiz: Versuch einer palinspastischen Korrelation und Ansätze zu einer kinematischen Analyse. Eclogae Geol Helv 62:105–142

Trümpy R (1973) The timing of orogenic events in the Central Alps. In: DeJong KA, Scholten R (eds) Gravity and tectonics. Wiley, New York, pp 229–251

Trümpy R (1975) Penninic–Austroalpine boundary in the Swiss Alps: a presumed former continental margin and its problems. Am J Sci 275:209–238

Trümpy R (1976) Du Pèlerin aux Pyrénées. Eclogae Geol Helv 69:249–264

Trümpy R (1980) Geology of Switzerland: a guide book. Part A. An outline of the Geology of Switzerland, with contrubutions by D. Bernoulli, M. Grünenfelder, V. Köppel. St. Müller and V. Trommsdorff. Wepf and Co., Basel, 104 pp

Trümpy R (1988) A possible Jurassic–Cretaceous transform system in the Alps and the Carpathians. Geol Soc Am Spec Pap 218:93–109

Trümpy R (1992) Ostalpen und Westalpen – Verbindendes und Trennendes. Jahrb Geol B-A 135:875–882