

## **Migration in the Middle Ages: Parasite stages in monasterial latrine pits.**

**Andreas R. Hassl**

Institut für Spezifische Prophylaxe und Tropenmedizin,  
Zentrum für Pathophysiologie, Infektiologie und Immunologie  
Kinderspitalgasse 15, A-1090 Wien  
E-Mail: andreas.hassl@meduniwien.ac.at

During more recent archeological excavations in abandoned monasteries in Mondsee (Upper Austria) and St. Pölten (Lower Austria) well preserved refuse pits were discovered and unsealed. The black-earthy contents of the pits inclose numerous bones, teeth, fish scales, ceramic shards, charcoal, and parasite stages, especially hard-shelled helminth eggs. In the course of a multidisciplinary processing the onsets and the ends of the pit fillings were chronologically determined by shard classification; preserved traditional local menus of Benedictine monks were implicated in disposal practices of abattoir refuse and kitchen garbage; and defaecation conventions were ascertained by identifying remains of human and animal parasites.

In the case of the former Benedictine monastery in Mondsee the pit was a slurry- and garbage chest used from the second half of the 15<sup>th</sup> century upwards, in the case of the former Austrian Congregation of Canons Regular abbey in St. Pölten the pit turned out to be a late medieval masoned latrine shaft filled with shards, abattoir refuse, kitchen garbage and excrement. In the excrement of this pit numerous helminth eggs were detected, especially a lot of *Trichuris* eggs. But, the classification of the host species of the whip-worms is challenging, most *Trichuris* eggs found seem either to be of human or of porcine provenance. As pork was seldom eaten by monks and friars till the 18<sup>th</sup> century and pig bones are not overrepresented in the abattoir refuse, human infections with *T. trichiura* may have been the source of the contamination. This assumption implies an exceedingly high infection rate of the friars with whip-worms. This postulated local epidemiological situation within the climatic unfavorable Late Middle Ages has to be elucidated with arguments of frequent pilgrimages to southern holy places and study visits of Italian universities.