Program and Abstracts

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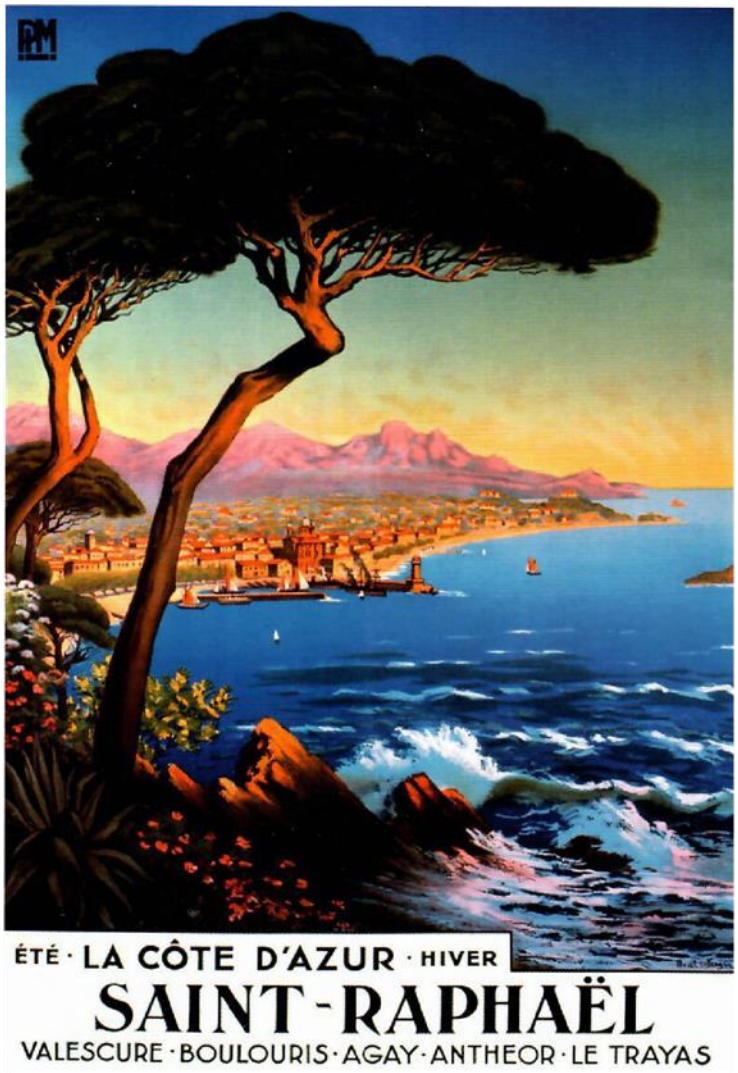

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Multiple potentially zoonotic pathogens revealed by virome analysis in Sorex spp. (Northeastern Alps, Italy)

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In recent years, shotgun metagenomics has allowed the characterization of entire communities of microorganisms in a single biological sample (e.g. tissue or fecal pellet), providing rapid detection and monitoring of a broad range of pathogens, including those with zoonotic potential and new strains (‘pathogen X’). Given their wide distribution and well-recognized reservoir competence, rodents have long been the target of infectious disease research; however, other small terrestrial mammals, such as insectivores, have been relatively understudied. Here, in the context of Project BEPREP (https://www.beprep-project.eu/), samples of Sorex spp. (bycatch) were collected in 2024 from two sites, at 1100 m and 1600 m a.s.l., in the Paneveggio - Pale di San Martino Natural Park (Province of Trento, Italy) in the northeastern Italian Alps. Viral shotgun metagenomics of RNA extracted from lung tissue revealed the presence of a number of potentially zoonotic viruses, including members of the Hantaviridae, Paramyxoviridae, Flaviviridae and Parvoviridae families. Several genera were first reports for these host species and/or for Italy, such as Pestivirus, Amdoparvovirus and Parahenipavirus. These results expand our knowledge of mammalian viromes and suggest that an unexpectedly high diversity of viruses exists in the insectivores of the Italian Alps.