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Modern Mathematical Ideas from Medieval Times

In looking at mathematics in the Middle Ages, we find some mathematical ideas being developed that are usually thought of as having been developed much later. Why is it that these ideas "died out" without any consequences – as far as we know – for several hundred years? Is it that there was too small a mathematics community to support and continue to develop these ideas? Reviel Netz gave an approximation to the size of the mathematics community in ancient Greece – surprisingly small and scattered geographically. Still, there was a community in which members learned ideas from others and developed them over the years. What about medieval Europe or the medieval Middle East? Were the communities large enough to support mathematical ideas – or are there just "geniuses" who worked on their own, discovered interesting mathematics, and then sent these ideas out into a world where no one could understand them? We will consider several examples of modern mathematical ideas that were originally developed in the Middle Ages and speculate on the possibilities that, in fact, these ideas were somehow preserved and made their way, though paths currently unknown, to the western Europeans who eventually "rediscovered" them and propagated them after the invention of printing.