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3. A TOURIST COLONY NOT TO BE RECOMMENDED

In 1927 Nikodym, in order to explore the geometric structure of the measurable sets in the plane, showed how to construct, inside a square Q , a set N that fills it (i.e. the measure of $Q-N$ is zero) and so that for each point x of N there is a straight line $l(x)$ passing through it and not hitting any other point of N (Fig. 4).

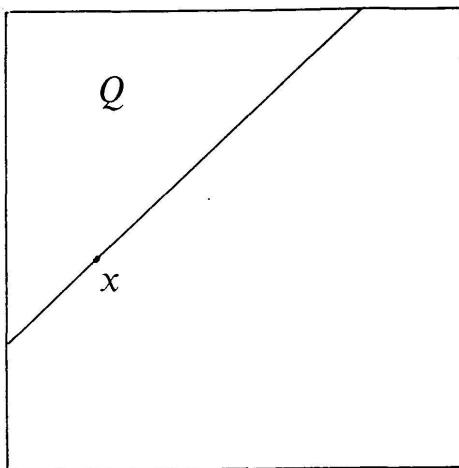


FIGURE 4

The architects of tourist colonies have not yet learned about this magnificent business possibility, but the day somebody tells you about the marvels of a colony in an island which offers a free view over the ocean from each one of its apartments, beware!

Although it seems incredible one can still make it better. R. O. Davies in 1953 constructed a set N in Q filling Q and such that each x of N has infinitely many directions in which one can see the ocean... inside any arbitrarily small angle one may fix!

4. A SMALL TREE WITH MANY FRUITS

In 1928 Besicovitch was informed about the needle problem and published its solution. In 1929 Perron simplified the somewhat laborious construction of Besicovitch. It has been further simplified later on. The final product of the line of