INTRODUCTION

Generalized polygons (generalized n-gons) were introduced by J. Tits in 1959 in his celebrated work "Sur la trialité et certains groupes qui s'en déduisent" *(Inst. Hautes Etudes Sci. Publ. Math.* 2 (1959) 14-60), in order to understand better the structure of the semisimple algebraic groups (including the groups of Lie-type and the Chevalley groups) of relative rank two.Generalized polygons are also the building blocks of the more general *Tits buildings*, which are natural models on which the semisimple algebraic groups of arbitrary rank act. Furthermore they are a natural generalization of the *projective planes*. Applications of the theory of generalized polygons can be found in almost every subfield of *incidence geometry*. In 1984 the standard work *"Finite Generalized Quadrangles"* (Pitman, Boston) by S. E. Payne and J. A. Thas appeared, and in 1998 the standard work *"Generalized Polygons"* (Birkhäuser Verlag, Basel) by H. Van Maldeghem; furthermore, there was the chapter *"Generalized Polygons"* by J. A. Thas in the *"Handbook of Incidence Geometry, Buildings and Foundations"* (F. Buekenhout editor, North-Holland, Amsterdam, 1995). The purpose of this Contact Forum *"Generalized Polygons"* of the Royal Flemish Academy of Belgium for Science and the Arts was to survey the evolution of the theory of generalized polygons, after the publication of these standard works. To that end talks on the different aspects were given by specialists in the field.

M. R. Brown talked about spreads and ovoids of finite generalized quadrangles. This lecture concerned results on this topic since the publication of the paper "Spreads and ovoids in finite generalized quadrangles" by J. A. Thas and S. E. Payne *(Geom. Dedicata* 52 (1994) 227-253) and the *"Handbook of Incidence Geometry"* mentioned earlier. In particular a number of recent interesting results on spreads and ovoids of the Tits generalized quadrangle $T_2(O)$, for O an oval of $\mathrm{PG}(2, q)$, q even, were presented.

K. Coolsaet lectured on combinatorial properties of finite generalized octagons. In particular restrictions on interesting point sets, such as partial ovoids, in finite generalized octagons were given.

Generalized polygons can be generalized in a natural way to near polygons. These objects were introduced by E. E. Shult and A. Yanushka in the voluminous paper "Near n-gons and line systems" *(Geom. Dedicata* 9 (1980) 1-72). B. De Bruyn surveyed recent results on these objects. Nice subgeometries were considered, new near polygons were constructed, and a classification of all linear representations of the finite near hexagons was presented. In particular, the quads,which are generalized subquadrangles of the near polygons, play a crucial role in this theory.

An update of the theory of flock generalized quadrangles and related structures was the theme of the lecture by S. E. Payne. A flock of a quadratic cone C in the finite 3-dimensional projective space $\mathrm{PG}(3, q)$ over $\mathrm{GF}(q)$ is a partition into conics of the points of C minus its vertex. By the paper "Generalized quadrangles and flocks of cones" of J. A. Thas (*European J. Combin.* 8 (1987) 441-452) such flocks appear to be equivalent to the q-clan generalized quadrangles due to W. M. Kantor and S. E. Payne. Subsequently many new classes of generalized quadrangles were discovered. Also, in the even case, the existence of a q-clan or a flock is equivalent to the existence of a family of $q + 1$ ovals in $\mathrm{PG}(2, q)$. By this relationship several new classes of ovals were found.

K. Tent spoke about model theory applied to generalized polygons and conversely. Here, groups with finite Morley rank play a central role. In terms of this notion several new characterization theorems of generalized polygons were obtained. It concerns here a promising new direction in the field.

Automorphisms and characterizations of finite generalized quadrangles were the topics of the lecture by K. Thas. It was an extensive survey of the most important results on elations, translations, and symmetries of finite generalized quadrangles. Also span-symmetric and skew translation generalized quadrangles were considered. There was also a section on semi quadrangles and a section on caps in generalized quadrangles. Finally, the relationship between nets and generalized quadrangles with a regular point was exploited.

H. Van Maldeghem lectured on embeddings of generalized polygons. All results on lax, polarized, full embeddings were surveyed. Particularly impressive were the recent theorems on the full embeddings of the finite dual split Cayley hexagons. For generalized octagons however, just one explicit result on embeddings was given in the lecture, which emphasizes once again that this field is still widely open.

Finally, R. Weiss mentioned the fundamental results on Moufang polygons mainly obtained by J. Tits. Other important contributions in this direction are due to B. Mühlherr, H. Van Maldeghem, R. Weiss. The most impressive part was the classification of the Moufang generalized quadrangles. Due to deadlines in connection with a forthcoming monograph by J. Tits and R.

Weiss on Moufang generalized polygons, R. Weiss could deliver no more than an extended abstract for these proceedings.

Without any doubt, due to the completeness, professionality, and up-to-dateness, these proceedings will be of great value to anybody working in *Incidence Geometry* in general, and in the theory of *Generalized Polygons* in particular.

The editors
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