Chapter 14
Final Comments and Further Reading

The papers [43, 101] are essential reading for this section; see also [11] and [60]. The references in these papers give additional papers that may be useful to look at. This research topic is very new but of growing interest, so there are a lot of possible unexplored directions to take.

Two such directions have been taken by two PRAGMATIC work groups. The results of these groups are written up in [54] and [72]. The paper [54] classifies all examples of point sets $Z \subset \mathbb{P}^2$ which have unexpected curves of degree $t = m + 1$ with a general fat singular point $X = mp$, under the assumption that the lines dual to the points of Z comprise what is known as a supersolvable line arrangement. The paper [72] shows that the 9 point set Z in Fig. 13.1 is the only one giving an unexpected quartic with a general point of multiplicity 3.

E. Carlini et al., *Ideals of Powers and Powers of Ideals*, Lecture Notes of the Unione Matematica Italiana 27, https://doi.org/10.1007/978-3-030-45247-6_14