

# EARLY MAPS OF TUGLOW CAVES - THE BRACEWELL COLLECTION

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## INTRODUCTION

The first half of the twentieth century is generally regarded as a time of few recreational visitors and little progress in the exploration, recording and management of our cave resources. It was a period of Australia's history not noted for encouraging innovation, scientific endeavour and curiosity. Some cave guides, of course, intermittently did some exploration but little was recorded. However, bushwalkers often gravitated to caving, indeed that is the origin of several speleological societies, but there were no such societies until 1946. Although some individuals made only a few trips, and there are few reports extant, a few did produce reports and maps which are of value if only because of their rarity. They fill in the social history of outdoor recreation in Australia.

## HISTORICAL DATA

The SUSS Tuglow book (Cooper et al., 1998) revealed a lot of unreported history of the cave, but omits the maps prepared in 1939 and 1940, on a trip led by Ronald Bracewell, and earlier ones dating back to 1934. I tracked down Bracewell in retirement in California. He says of his previously unreported expedition that others present were his father Cecil Charles Bracewell, Horace A. Salmon, Hilary Jackson (Vice-President of the Trampers Club), George Loder (Trampers Club) and an Argentinian whose name he has forgotten. They built a rope ladder about 100 feet long using rungs cut on the spot. They saw Bouchier's name in pencil and an 1800s date. Salmon tried taking photographs using magnesium powder but his shutter jammed at the bottom. The maps were produced some months later and one (not reproduced) is labelled "Drawn from Memory by H. A. Salmon 20/11/39".

Bracewell says that this was his first and only caving trip, but that Salmon was the driving force behind the trip. Bracewell held on to the maps and some other minor papers for sixty years, donating them during a visit to Australia in 2000. On the other hand, Harper and Salmon had been actively caving for some years and the collection includes their five unrecorded but remarkably detailed maps dating back to 1934 but presumably taken on the later Bracewell trip. For their time they are good maps. Two show the same cross-section of the cave (though evidently on a different projection) as the Glanfield map produced by Cooper et al. (op. cit., p. 26) and attributed as possibly the first map of Tuglow Cave. At Easter 1934, Glanfield reached only the 135ft level, but Harper and Salmon obviously reached and mapped the river at 200ft.



PHOTO: STEPHEN BUNTON

*The streamway in Tuglow Cave.*

There must have been some discussion in bushwalking circles at the time about the rediscovery of the cave, and the inference is that Harper and Salmon heard about the Glanfield expedition, relocated the cave and this time reached the bottom. Harper's autobiographical papers (not examined for this paper, but cited by Cooper et al. as being in the possession of Prof. R Horne in Melbourne) may reveal exactly when the Harper trip took place. Word certainly got around: Cooper mentions two more trips reported in January 1935 by Oliver Moriarty which also reached the river and probably made further discoveries.

There are some fine cross-sections of the vertical elements. However, I am not familiar with Tuglow Caves so have had difficulty comparing these maps with those in Cooper et al. because the projections are to cardinal compass points whereas the SUSS map (2T1.SUS3) is oriented 240 – 60 TN. One map labelled "Phantom Plan of System" (Figure 5), is particularly difficult to orient with respect to the entrance, Knights Knobbly Knob Chamber and Tricketts Passage.

Bracewell, Giovanelli and Harper all joined CSIRO after graduation and remained lifelong friends. Ron Bracewell, BSc, BE, ME (Sydney), PhD (Cambridge), designed microwave radar in World War 2, joined the faculty at Stanford University in 1955 and went on to become Professor Emeritus of Electrical Engineering. Ron Giovanni DSc (1915-1984) had earlier been one of the authors of the well-known map of Colong Caves dated 1945 but originating in the 1930s. He became Chief of the Division of Physics in CSIRO and later coordinated the changeover from imperial to metric units on various dates over 30 years ago. Arthur Harper AO led the

Heat and Temperature Measurement Division of Physics for over 30 years and was Executive Member of the Metric Conversion Board, for example changing road signs overnight to a predetermined schedule. He died in 1991 aged 78. Described as the driving force behind the trip, Horace Salmon was a drapery salesman, founder and President of the Trampers Club and a bushwalking friend of Paddy Pallin.

Part of the collection, the maps reproduced here, are those drawn by Harper and Salmon. Despite the fact that he made only that one trip, Bracewell's collection and recollections provide useful additional insight into the beginnings of organised recreational caving in this country.

## ACKNOWLEDGMENT

I thank Emeritus Professor Ronald Bracewell for permission to publish these data. ■

## THE ORIGINAL MAPS

Tuglow Caves: sketch of 60 ft level, drawn from memory by H. A. Salmon on 20/11/39. Scale 1" = 20 ft. (*not reproduced here*).

Gangerang Range: hand drawn map signed by Ron Bracewell on 15th March, 1941 (*not reproduced*).

Tuglow Caves: Drawn from data collected in the Horse Gully Caves on 25-27 December 1939 and Tuglow Caves on 24-28 December 1939 and 28 January 1940 by R N Bracewell (5 sheets) (*not reproduced here, this is a cover sheet prefacing the next five maps*).

Tuglow Caves: Three sheets, two signed by A. F. A. Harper and H. A. Salmon. Sheet 1: "Plan of 135' floor", Sheet 2: "Cross-section of Drop 135' ... 200' approx. (looking east) (?)", Sheet 3: "Plan of 200' floor". Dated 1934. (*See Figures 1, 2 and 3*)

Tuglow Caves: Two sheets "Section looking West" and "Section looking South" with "Phantom Plan of System", signed by A. F. A. Harper and H. A. Salmon on 22/9/1934. (*See Figures 4 and 5*).

Tuglow River Caves, schematic representation of relative positions of cave passages, scale 1:720, signed R.N.B. 31-1-40 (*not reproduced here*).

## REFERENCES

- Bracewell, R. N. 1939-1940: A ms. Collection of maps of Tuglow Caves produced or collected by Ron Bracewell when exploring these caves near Oberon, NSW. Manuscript Collection, State Library of NSW.
- Cooper, I., Scott, M. and Vaughan-Taylor, K. 1998: *Tuglow Caves*, Sydney University Speleological Society, 65 pp.

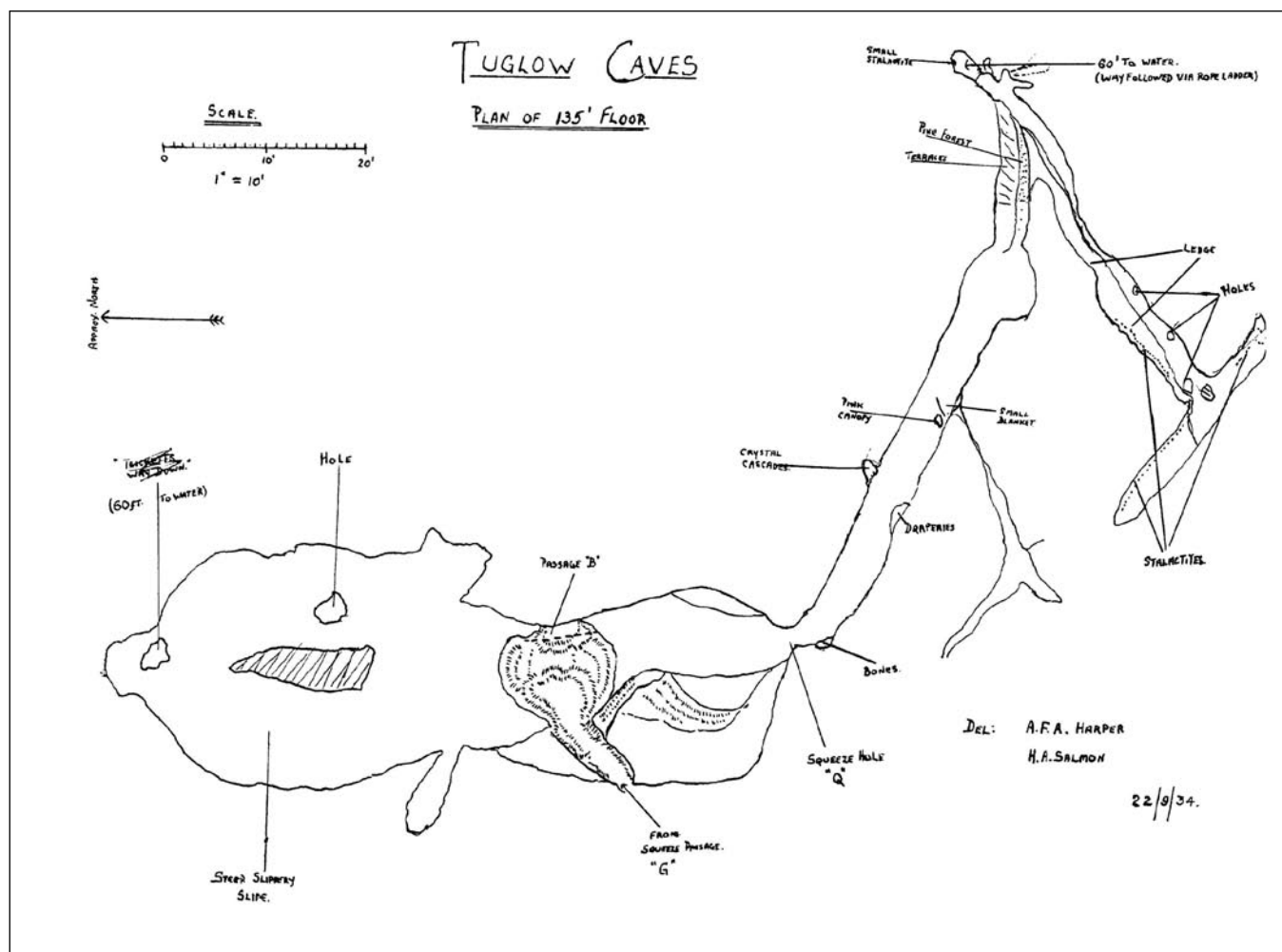


Figure 1: Tuglow Caves. Plan of 135' floor

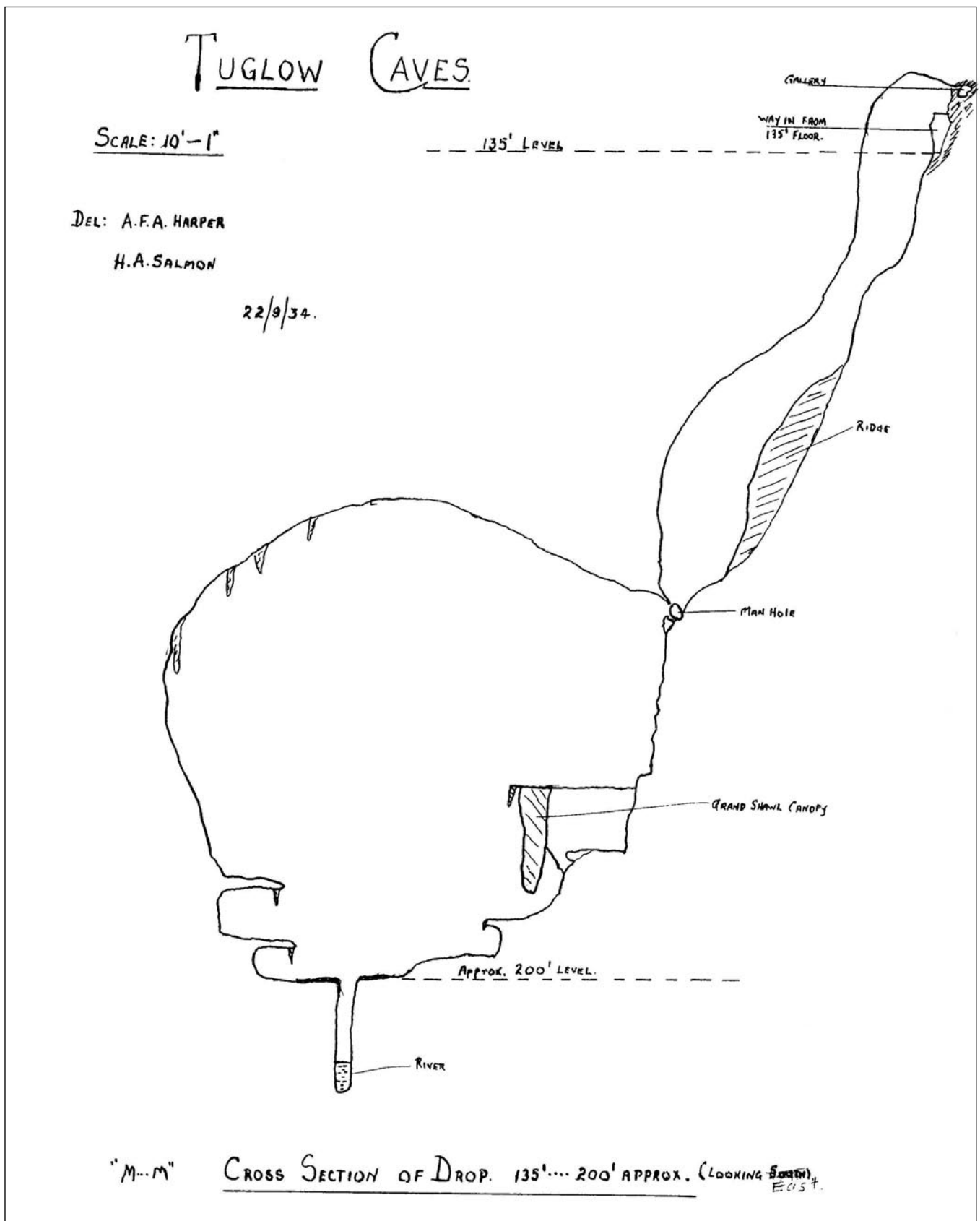


Figure 2: Tuglow Caves. Cross-section of Drop 135'...200' approx. (looking east).

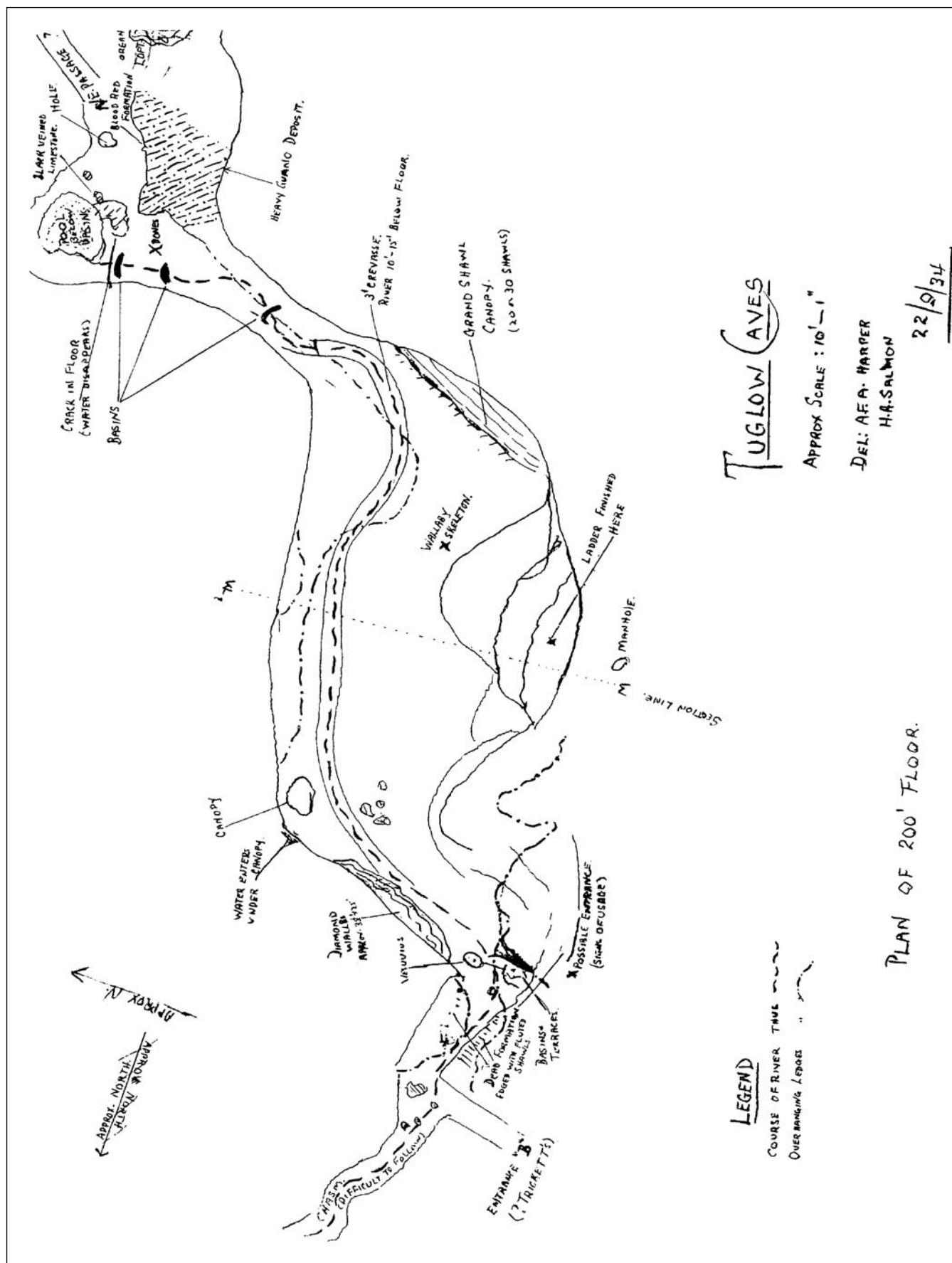


Figure 3: Tuglow Caves by A. F. A. Harper and H. A. Salmon (1934).

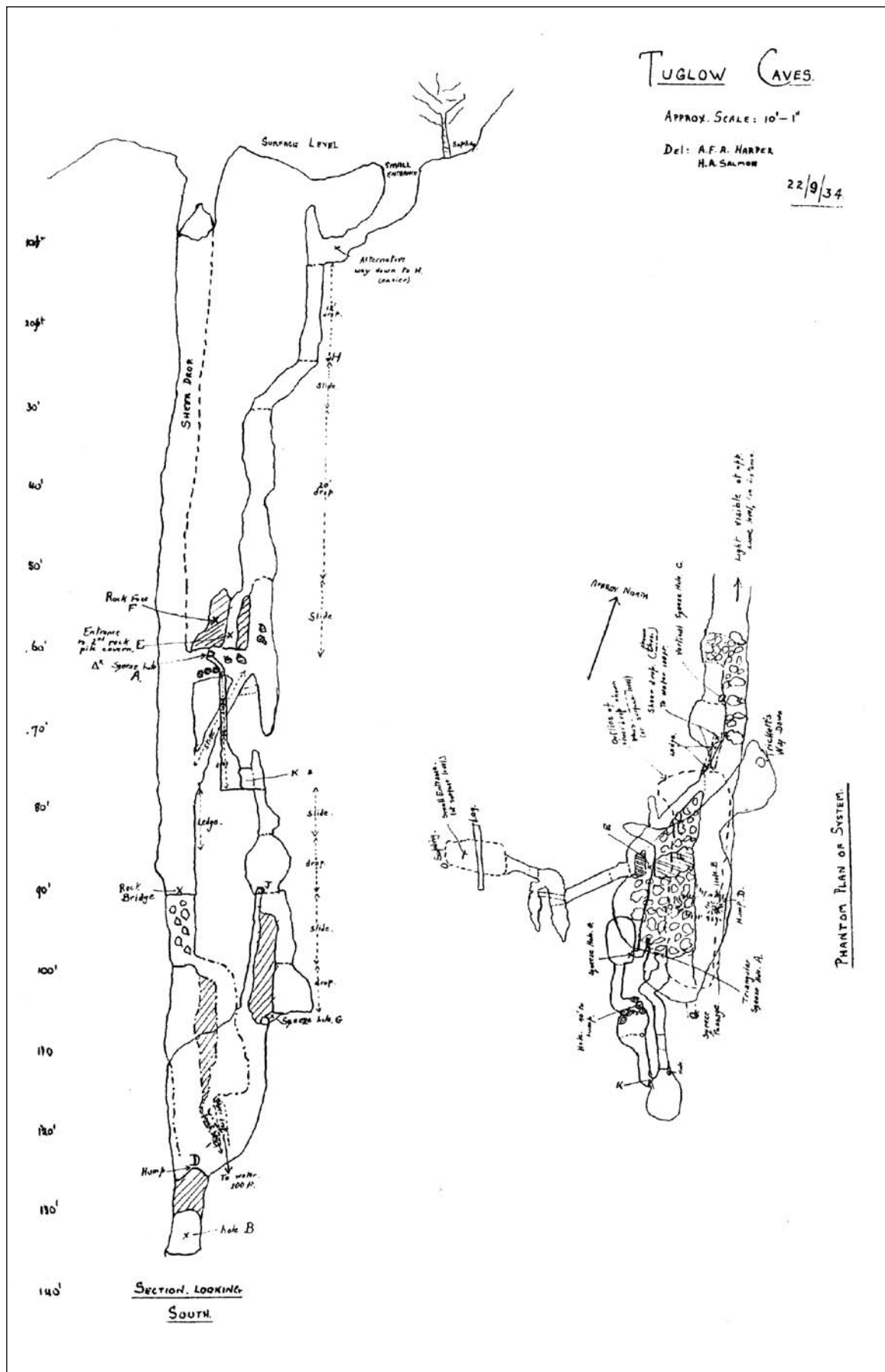


Figure 5: Tuglow Caves. Section looking South with Phantom Plan of System.

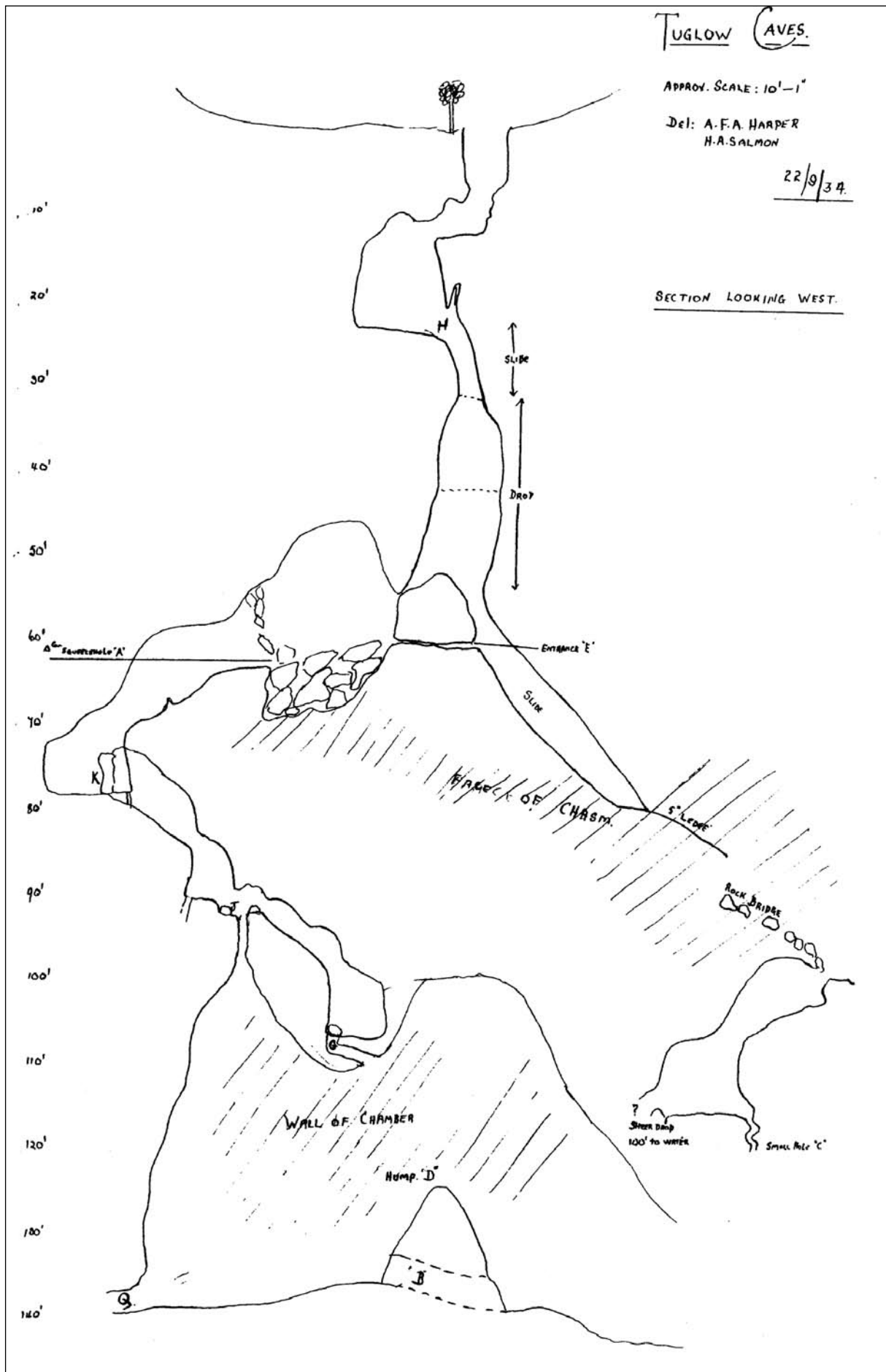


Figure 4: Tuglow Caves. Section looking West.