

# THE NEWSLETTER OF THE SYDNEY UNIVERSITY SPELEOLOGICAL SOCIETY

Box 35,  
The Union,  
Sydney University.

Price Five Cents

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Ad augusta per angusta

Edited by the Hon.<sup>r</sup> Secretary

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Volume 6 Number 10

March 1967

## ACTIVITIES CALENDAR

### February

25-26	Bungonia Wyanbene	Barbara Dew 575890 Graeme Jessup 444016
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### March

4-5	Jenolan	Erik Halbert 6305502
9	GENERAL MEETING	SEE PAGE 3
11	Bungonia -	John Dunkley 854333
11-12	<u>FRESHERS' TRIP</u> - Wee Jasper	Graeme Jessup 444016
18-19	Cliefden - S & R Organised by OSS	John Dunkley 854333
23-28	Easter: Cooleman Yarrangobilly	Harley Wright 461196 John Dunkley 854333

### April

6	ANNUAL GENERAL MEETING	Usual Place, 7.30p.m.
8-9	Tuglow	Mick Morris 407180
		or Rick Crowle 447415
15-16	Abercrombie	LEADER REQUIRED
22-23	Timor	LEADER REQUIRED
29-30	VACANT - CONTACT SECRETARY	

### May

1	GENERAL MEETING	
13-28 (tentative)	Central Australia Safari	Graeme Jessup 444016

Some further details on pages 2-3

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SOME BRIEF DETAILS OF FORTHCOMING TRIPS

Bungonia - March 11 - John Dunkley 854333

To prepare those interested in being instructors for the Boy Scouts' Speleology Badge. General exploration is also anticipated.

FRESHERS' TRIP - Wee Jasper - March 11-12 - Graeme Jessup 444016

All interested newcomers should contact Graeme. Also would all members who intend going PLEASE come to the next meeting, or inform Graeme of spare seats in cars ?

Cooleman - Easter - March 23-28 - Harley Wright 461196

All those going, please inform Harley of Seating.  
A typical Easter trip, no doubt.

I SINCERELY thank Ron Murray and Vince O'Donnell for their sterling work in manning the SUSS Stall during Orientation Week. Without them it would not have been.

NOTICEBOARD. The SUSS Noticeboard in Science Road has been resurrected. A different one, and larger. Information concerning trips should be given to the Hon. Secretary even at short notice, as this way it can be made available to all those who care to consult the Noticeboard. Contact Geoff Butlin - Box 35, The Union, or 462213 (home), or at the Fisher Library extension 2996.

TRICKETT'S Guides. In the last Newsletter a note appeared about these. More success than anticipated has been achieved : they are currently being bound into one volume, to be available ONLY from the Secretary. The volume will contain Xerox facsimiles of Trickett's complete set of guides, i.e. Abercrombie, Bungonia, Jenolan, Wellington, Wombeyan, and Yarrangobilly. Total, about 160 Xerox pages.

MELLAMULLANG EXPEDITIONS 1966.

This excellent book, which many of you will have seen displayed at the last Meeting was recently published by CEGSA in Adelaide, for \$1.00 per copy. A bulk order will be going from SUSS, and if you would like a copy, give your name and address and \$1.00 to Geoff Butlin at the next Meeting (March 9th) or post to Box 35, The Union. On receipt your copy will be posted to you. Orders will not be accepted after Friday 17th March.

One trip not detailed above:

Cliefden - March 18-19

This will be a practice Search and Rescue, organised by the Orange Speleological Society, and members from other Societies will be present. JUST GO. But if you don't know your way, or would like to know a little more, phone John Dunkley 854333.

# READ THIS PAGE IF NO OTHER

GENERAL MEETING 9th MARCH 7.30p.m.

Top floor, Geography Building. If you don't know where this is, its opposite Manning House. If you don't know where Manning House is, ask at the Union. If you don't know where the Union is, ask any likely looking bod you can find. If you can't find any likely looking bod, don't give up: keep looking!

This is perhaps the most important Meeting for the forthcoming year: we will be meeting some of our new Prospective members for the first time, and will be planning four trips. (Wee Jasper, Cliefden, Cooleman, Yarrangobilly). Movies are anticipated. Slides are inevitable. If Glenn remembers the key, we might even have supper.

If you intend going on only one of these trips please come so that transport, etc. can be arranged. If you simply can't make it, could you PLEASE PLEASE (I'm on bended knees) phone Geoff Butlin 462213 (home) or Fisher extension 2996.

If you don't intend to go on any of these trips, still come and renew acquaintances : we might even remember YOU.

FRESHERS' TRIP WEE JASPER 11-12 MARCH

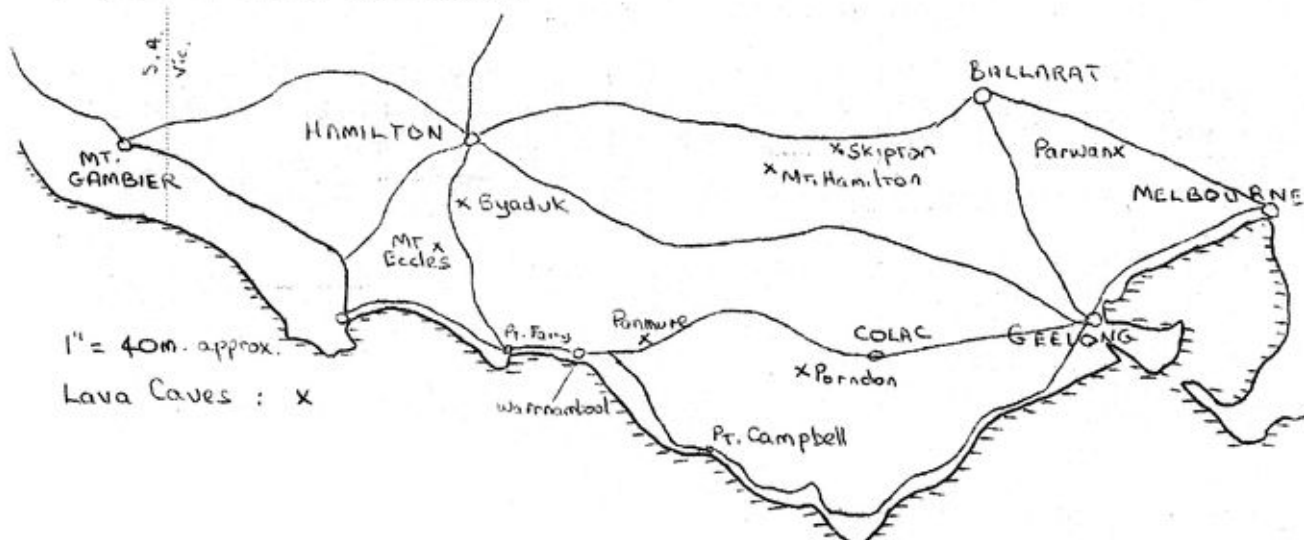
Let us make this the most successful trip ever: even if you feel reluctant to go underground these days come and fish in Micalong Creek; or explore the track to Brindabella and thence to Cooleman; encourage Freshers; be there; see that you still ARE a member of the Society; prove to yourself that SUSS IS A WAY OF LIFE. Come on this trip -- come to this Meeting -- you're needed & wanted.

CAN YOU HELP ?

SUSS needs new members. Instead of coming to the above Meeting alone, bring a friend who may be interested in participating in the Society's activities. Bring them along on the trips that are not restricted in numbers (but be sure to con 50c. out of them first). Gentlemen welcomed as members. The fairer sex will be welcomed with open arms (by the Secretary and other Committee members if they're quick enough). Others (besides gentlemen and ladies) will be tolerated. So - can you help?

### LAVA CAVES AND ASSOCIATED FEATURES IN WESTERN VICTORIA

One of the field trips arranged following the A.S.F. Conference in Victoria was a jaunt to the lava caves. The rolling plains of Western Victoria make up the third largest lava flow in the world, extending from Bacchus March to beyond S.A. border, and from the Glenelg Highway to the coast. Such tourist attractions as Mt. Gambier and Tower Hill, Warrnambool, are quite well known. Not so familiar are the numerous crater lakes, lava flows and caves



We were rather fortunate to have as a guide Cliff Ollier from the Geology Dep't. of Melbourne University, the authority on the area. The trip occupied four days and more could have been spent.

The age of the lava flows varies greatly, the oldest being at least 20 million years, the youngest not much over 5000, that is after the arrival of the aborigines. However there is no sign of activity whatsoever at the moment. The newness of the flows means that many features are preserved in fine detail. In many places, especially Byaduk, the rock has not had enough time to begin breaking down into soil, so that in this area the flow of lava appears as a dark patch on aerial photographs as it flows along valleys like a river in flood, growing only bracken. Numerous craters of extinct volcanos dot the landscape, accompanied by cinder cones etc. There are several crater lakes, Mt Gambier and Tower Hill being the best known, although Mt Eccles, being only 5,000 years old, is perhaps more interesting. Also at Mt Eccles is a remarkable spatter cone rising about 40' above the surrounding countryside, and down which one can descend vertically for about 100' into the old magma chamber from which the lava was ejected. Around the rim of this little volcano one can still see the remarkably fresh signs where liquid lava dripped off rocks leaving flow marks, stalactites and the like.



Inside, the caves are of about the same size as a railway tunnel, although some are larger, and others are asymmetrical. Church cave, Byaduk, is of Mulla-mulla proportions in cross-section. The walls and floor are usually considerably darker than limestone caves and one needs to keep a carbide lamp well-stoked. Other than this the lava tunnels are very much like limestone caves. The longest single cave is at Mt. Hamilton which has 3,162' of branching tunnels. The caves at Byaduk are all part of a single lava tunnel which has collapsed in some places, giving the appearance of a succession of dolines, while in other places it is blocked. (see map) Many of the caves contain small lava stalactites up to several inches in length. In places they give a similar appearance to cave coral of limestone caves. In a recess of the Church Cave at Byaduk a tiny growth of flowstone was observed - about 2-3 square inches.

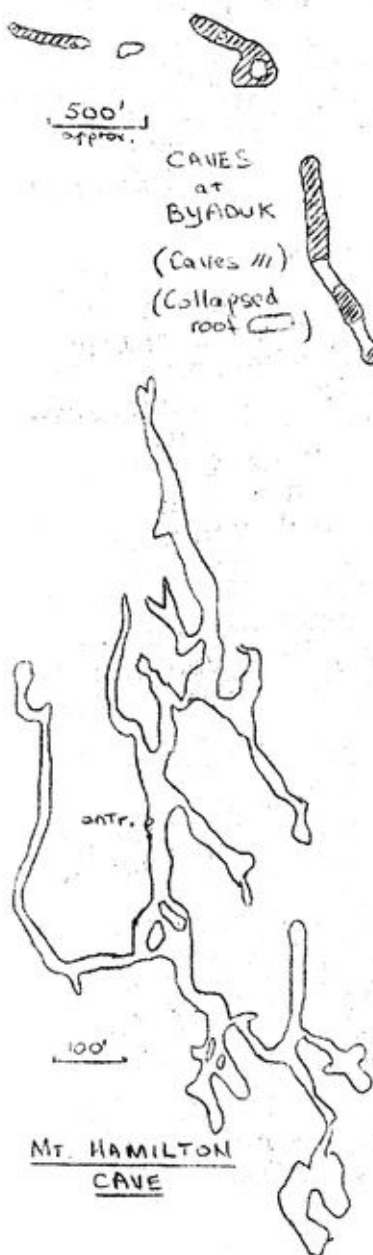
The origin of the calcite in this cave is obscure, the surface covering being basalt bedrock with practically no soil, and the roof of the cave being only 10-15' thick. A small nearby cave seemed to contain some genuine calcite cave coral.

The caves are believed to have formed in a two-stage process, whereby liquid lava is at first encased in the more solid flow, then later on flows out leaving the tubes behind.

In some places there is very little surface collapse, eg Mt Hamilton, the entrance to which is a narrow slit. Accordingly it seems likely that there are other lava caves completely sealed from the surface awaiting the future explorer perhaps with detecting instruments.

Lava caves occur also in North Queensland, where no exploration has been done, in Hawaii, where it is possible to actually look through a collapsed roof and see lava flowing inside the tube, in western United States and in Uganda. Because there is no inherent reason why a lava tube should have good ventilation, many of the ones in the western United States are ice caves e.g. at Lava Beds National Monument in northern California. In Crystal Falls Cave, Idaho, there are natural underground glaciers. Near the Snake River in Idaho there is a lava tube 20 miles long, most of it unfortunately collapsed.

Thanks are due to Cliff Ollier for organising and leading the trip, and to the owner of Mt Widderin station, Skipton, in whose well-appointed shearers' quarters a very comfortable night was spent. It's a pity more geologist-types weren't on this trip.



BOOK REVIEWby ierdieDEPTHS OF THE EARTH : Caves and Cavers of the United States

by William R. Halliday, M.D. Harper & Row, New York, 1966.  
398pp. , numerous photos. and maps. Price approx. \$7.50

In the past few years perhaps 8 or 10 new popular books on caving have appeared from France, U.K. and U.S.A. in response to the increasing interest in the pursuit. I have been rather cynical in my reviews of some, and none, save for Moore & Nicholas's "Speleology", had any great merit.

Halliday's new book is something refreshingly different. Its readable, and engrossingly readable at that. Although written in familiar narrative form, it manages to avoid the sensationalist type of narrative that is apt to be the trademark of adventure books. There are occasional lapses into hypothesized reconstructions of history, but it is skilfully done and weaves into the rest of the chapter well, e.g. George Washington's caving in 1748. Most of the narrative is contemporary fact and the author has personally visited all the major caves he treated, which range over most of the mainland 48 states.

The standard caves beloved of pulp writers are not overlooked. Carlsbad, Floyd Collins, Mammoth, Neff Canyon, Schoolhouse and Cave-in-Rock are all there. However the garbled stories and legends that decorate other accounts of these caves are presented more accurately and soberly by Halliday. There is new light on the Floyd Collins debacle (the rock that entombed him weighed only 27 lbs. not the 6 tons of popular legend). The Jim White - Carlsbad legend is debunked on the basis of recent speleo-historical research. The story of Mammoth Cave is a comedy in many parts. It seems that impoverished hillbilly Kentuckians of the 20s and 30s were engaged in The Great Cave War - trying to divert unsuspecting Mammoth-bound tourists to their own particular hole in the ground, by removing road signs, replacing them with misleading fakes, giving fake directions, impersonating policemen, filing numerous law suits and so on. All of which helped precipitate the Mammoth Cave National Park bill in 1926.

However there are hitherto inaccessible descriptions and stories of recent, less well-known caves and cavers accompanied by statistics next to which Mullamullang pales into insignificance. Of Jewel Cave, S.D., which had been a 'nice but uninteresting' 900' cave from its discovery in 1900. Until 1957, that is, when a Ranger poked through a squeeze. By 1963, when the National Parks Service temporarily halted exploration, no less than 69,428' had been mapped, nearly all by just two or three cavers. Of the huge Missouri caves where Bretz formulated his famous theories about the development of caves, where Big Spring effluxes 250 million gallons of water a day (Sydney uses about 400million a day), carrying 175 tons of dissolved minerals a day, excavating the equivalent of a cave 30' wide, 50' high and one mile long every year.

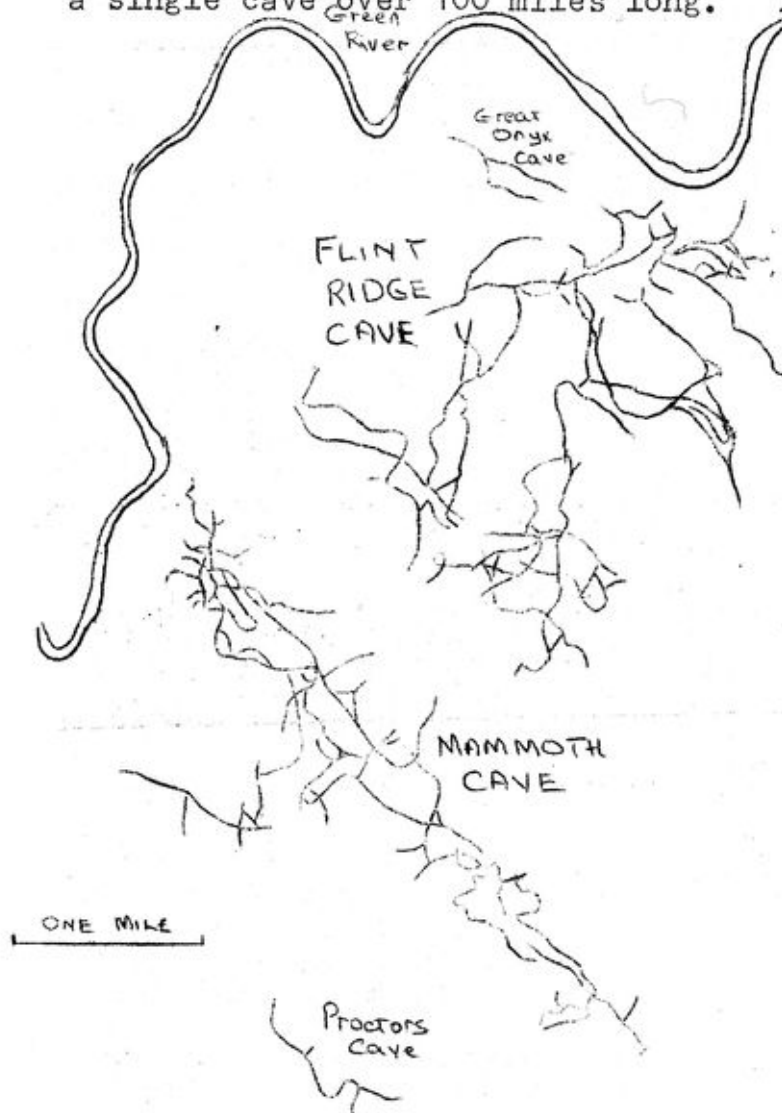
The fascinating lava and ice-lava caves of the west are described, as are the exploits of cave divers. In Devils Hole, Nevada, divers have been down 240' without approaching the bottom, while in Florida (where 29 scuba divers have died in underwater caves) bones of long-extinct mastodon have been located deep down. Finally, Flint Ridge, whose 55 miles surveyed make it the longest cave in the world.

The book concludes with a description of the trends in American caving today and its future prospects. It becomes evident that the States are anything but 'trogged out'. Immense possibilities wait in Jewel Cave, in Butler Cave, Va., which, discovered only in 1958 and already 15 miles long, occupies only a small part of the local limestone; in Flint Ridge where the long-awaited connection with Mammoth will, sooner or later, produce a single cave over 100 miles long.

And in the Grand Canyon of the Colorado River, where cavers have already descended 500' through 248' of limestone and 250'+ of sandstone toward deeper limestone at 2000', from which large caverns open out into the Canyon. On the Coconino Plateau above, Rand Corp. scientists have traced by fluorescent chemicals 24 miles from a sucking to a breathing hole, and postulate a network of narrow passages fissuring the plateau. Something like Jennings's theories about the Nullarbor.

To the armchair caver or the active one who wants to drool, this is an enthralling and absorbing book. The price is high, but it's worth a dozen Casterets

Unfortunately it is not yet available in Sydney. It is hoped to import another copy from the United States in a few months as a prize in a raffle.



THE WORLD'S LONGEST CAVE

55 + 45 = 100miles -- WHEN ?



## NATIONAL PARKS AND NATURE RESERVES IN WESTERN AUSTRALIA

Several years ago the Australian Academy of Science appointed A Committee on National Parks, to enquire into all aspects relating to the supply of and need for all types of Nature reservations. The Western Australian Sub-Committee has recently published, with the assistance of the Royal Society of W.A. and of the National Parks Board of W.A., a weighty 266page report which has become the source book for information on these matters in W.A. There are several items of speleological interest in it.

The contents comprise a history of the Reserve Movement in W.A., a list of existing National Parks and Faunal Reserves and State legislature relating thereto, a lengthy summary of recommendations regarding present and proposed reserves (with bibliography), followed by a list of Geological Reserves, Aboriginal Sites and Historical Buildings.

The existing Parks and Reserves at Margaret River - Hamelin Bay, at Yanchep and at Mt Lesueur (near Jurien Bay) are covered and there are a number of recommendations concerning more effective preservation of the caves in these areas. The real interest, however, lies in the recommendations that National Parks be declared at two locations on the Nullarbor, and one in the Kimberleys:-

Twilight Cove - The Subcommittee recommends that nearly 2000 square miles of almost uninhabited coastline and hinterland from east of Cape Pasley to midway between Twilight Cove and Eucla be permanently reserved as a National Park, to preserve the great cliffs fronting the bight and the long high sand dunes. The area has great scientific value. The sole reference quoted is Jennings in Occasional Paper no. 2 of the Cave Exploration Group (S.A.)



Northern Nullarbor - an area of nearly 9000 square miles representing typical geological formation and associated vegetation (or lack of it) of the Nullarbor proper and adjacent areas. is recommended as a National Nature Reserve. Jennings in OP2 of Cave Exploration Group (S.A.) is the sole reference quoted.

Napier - Oscar Ranges Area - about 200 square miles of the Kimberleys, typically representing the Devonian limestone of the area, with associated features such as the very picturesque gorges and The Tunnel with its famed freshwater subterranean crocodiles. The caves of the area are often decorated with aboriginal paintings of great interest.

My only comment is that none of the really 'caverniferous' Nullarbor is represented.

JRD



FLINT RIDGE CAVE , Kentucky- - another ten years

The publication of its map of Flint Ridge Cave system by the Cave Research Foundation brings to a culmination the second decade of concentrated <sup>work</sup> in this, the world's longest cave. The achievement is all the more extraordinary when one realizes that nearly all the work was done by a small group of 40 or so dedicated speleologists. Some of the exploration techniques developed in this cave should prove useful if Mullamullang is extended beyond the endurance barrier again and requires a re-appraisal of exploration methods.

Flint Ridge occupies about 10 square miles of limestone near Mammoth Cave. Formerly it was a number of unconnected caves - Salts, Unknown, Crystal, Colossal and several others, each quite substantial caves in their own right. The linking of these caves had been predicted on and off for a long time, especially after fluorescein tests in 1925 proved that most of the streams in the area effluxed at Pike Spring, thereby proving the impossibility of a proposed dam on the Green River nearby. Unfortunately, the Ridge was subdivided by some deep valleys; pessimists doubted that caves could extend under these to link the various entrances.

In the first few post-war years exploration barely reached beyond the limits set by Floyd Collins of Sand Cave fame, back in the 1920's. The much trumpeted week-long expedition of 1954, recounted in "The Caves Beyond", achieved very little in view of the enormous energy expended.

Evidently the base-camp system had to be improved upon. Gradually there evolved a technique of rapid assault whereby small parties of experienced, conditioned cavers moved rapidly to the known limits, pushed a little further, then returned before any one of them became a burden to the others. Caches of food were built up deep within the cave.

In 1954, to the dismay of cavers, the National Parks Service banned caving completely, thus restricting exploration to privately-owned Crystal Cave. Convinced that they were on the verge of a great breakthrough, however, cavers eluded patrols, one group in 1955 paying for it with a \$200 fine. It was well worth it. In November 1954 one group, still unnamed because of the illegality of it, 'cracked' Unknown Cave. In a single day probably unexcelled in all the history of cave exploration, they discovered no less than 5 miles of virgin cave.

In the meantime, discovery of the Eyeless Fish Trail in Crystal Cave showed that passages could pass beneath the deep valleys intersecting Flint Ridge. A new theory about the nature of the famous dome pits concentrated attention on them, leading soon to an extensive upper level, Pohl Avenue, and beyond, until at last in October weary explorers made the first success in the physical integration of Flint Ridge, when they emerged in Unknown Cave after a long trip from Crystal Cave.

1955 also saw the discovery of the 2.6 mile long Turner Avenue, extensions of which led in 1956 to Ellis Trail (1 mile) and in 1957 to Gravel Avenue (2.3 miles), thereby driving Crystal Cave deep into the heart of unknown parts of Flint Ridge.

However getting to some of these areas was very arduous. It looks quite close, but actually Pohl Avenue is several difficult miles from the entrance to Crystal Cave. A new entrance was badly needed if any progress was to be made. It took 5 miles of survey, another 5 months and 3600 man-hours and one ton of dynamite before a man-made entrance was blasted at Austin's Entrance. This made new work easier by far, but nothing substantial happened for several more years, even though the chartering of the Cave Research Foundation had achieved a rapprochement with the National Parks Service.

Hopes were raised in August 1960 when Jack Lehrberger, discoverer of the Crystal-Unknown link, managed to link Salts with Colossal Cave. A bare year later the long through trip from Crystal, Unknown to Salts was achieved and the whole ridge was open.

Interconnection between Crystal, Salts, Bedquilt and Unknown Caves, together with several smaller holes, has been made. Of the caves on Flint Ridge, only Great Onyx remains separate. Hand-in-hand with exploration, the survey grew faster than it could be drafted. About 13 miles was on the boards by 1959, after which a concentrated burst added another 8.6 miles in 1960, 11.1 in 1961, 7.9 in 1962 and about 15 miles from 1963-1966, until the total now stands at approximately 55 miles. Holloch, in Switzerland, lags behind with 48. The biggest of everything, it seems, is in U.S.A.

For the past few years explorers have been pushing further and further beneath Houchins Valley and unconfirmed but persistent rumours circulate that the greatest breakthrough of all is within grasp. Next week or next month or possibly not for 20 years, but sooner or later, explorers from Flint Ridge will emerge in Mammoth Cave, notching up a single cave over 100 miles long, all of it surveyed. The old stories about the 150 miles of passage in Mammoth may well be true eventually.

The greatest significance of Flint Ridge, however, lies not in the cumulative mileage nor even in the prodigious feats of valuable survey, but in the unparalleled opportunities for study of a variety of cave environments. Already plans are almost complete for America's first underground laboratory in Great Onyx Cave.

Even so it is unlikely that any cave in the world will ever be the subject of such a tremendous outpouring of human energy. The compilation and publication of the survey of the Flint Ridge Cave System is a tribute to the persistence and dedication of the remarkably small number of cavers making up the Cave Research Foundation.

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