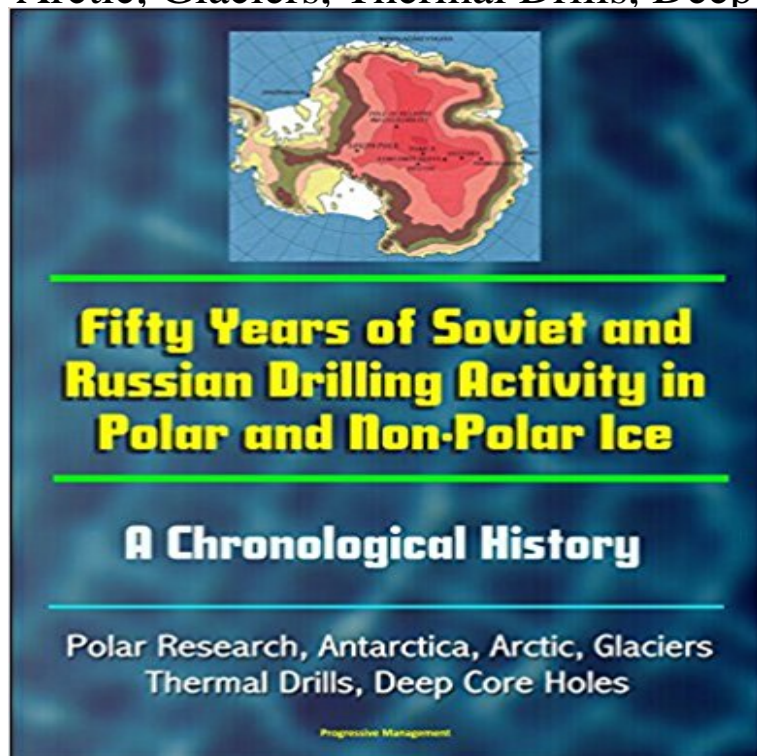


# Fifty Years of Soviet and Russian Drilling Activity in Polar and Non-Polar Ice: A Chronological History - Polar Research, Antarctica, Arctic, Glaciers, Thermal Drills, Deep Core Holes



Soviet and Russian drilling activity in ice began in 1955 while conducting temperature surveys on a glacier in Franz-Josef Land in the Arctic and continued to 1960 on the glaciers of the polar Ural and the northern Tien Shen mountain ranges. In 1956 the first Complex Antarctic Expedition (CAE) was formed and the first Antarctic drilling was conducted in October of 1956 near Mirny Station. Later, the expeditions were referred to as Soviet Antarctic Expeditions (SAE) and Russian Antarctic Expeditions (RAE). Early efforts were conducted with hand drilling equipment followed by mechanical rotary and percussion drilling techniques. Thermal (flame and thermal electric) boring drills and later thermal coring drills eventually culminated in drills of the TELGA type for thermal drilling deep, dry holes. One such hole reached a depth of over 900 m at Vostok. Use of TBZS type thermal drills for drilling in fluid-filled holes were also developed, as was a technique using anti-freeze to dissolve the melt water formed, the dilute solution then remaining in the hole to provide the necessary hydrostatic balance. An electro-mechanical drill KEMS was first introduced on Vavilov Glacier, Severnaya Zemlya (Russian Arctic) in 1984 and then in 1989 at Vostok Station. Five major holes have been drilled at Vostok, the last one stopped in 2006 (RAE 51) at a depth of 3650 m, 100 m above Lake Vostok. This report chronologically summarizes the Soviet and Russian efforts over the last 50 years. Chapter 1 \* Antarctica \* Introduction \* 1955-56, First CAE (Complex Antarctic Expedition): Mirny \* 1956-57, Second CAE: Mirny \* 1957-58, Third CAE \* 1958-59, Fourth CAE (renamed SAE, Soviet Antarctic Expedition) \* Vostok \* Shackleton Ice Shelf (66 36 S, 101 20E) \* Drigalskiy Island (appr. 66 S; 92 E) \* Lazarev Station (6958S, 1255E) \* 1959-60, Fifth SAE \*

Lazarev Station \* Arctic and Antarctic Research Institute \* 1960-61, Sixth SAE: Mirny \* 1961-62, Seventh SAE \* 1962-63, Eighth SAE: Mirny \* 1963-64, Ninth SAE \* Traverse Vostok-Pole of Relative Inaccessibility (78 S, 20 E)-Molodyezhnaya \* 1964-65, Tenth SAE \* 1965-66, Eleventh SAE: Mirny \* 1966-67, Twelfth SAE: Novolazarev Ice Shelf \* 1967-68, Thirteenth SAE: Mirny \* 1968-69, Fourteenth SAE: Mirny \* 1969-70, Fifteenth SAE: Vostok \* 1970-71, Sixteenth SAE: Vostok \* 1971-72, Seventeenth SAE \* Vostok \* Mirny \* 1972-73, Eighteenth SAE \* Vostok \* Mirny \* 1973-74, Nineteenth SAE \* Vostok \* 1974-75, Twentieth SAE \* Vostok \* Vostok-1 (72 08S, 96 35E, 647 km mark on the Mirny-Vostok route) \* Mirny \* Lazarev Ice Shelf \* 1975-76, Twenty-first SAE \* Vostok \* Vostok-1 \* Lazarev Ice Shelf \* 1976-77, Twenty-second SAE \* Vostok \* Vostok-1 \* Novolazarevskaya Station \* 1977-78, Twenty-third SAE \* Vostok-1 \* Base Salut (65 32 S, 96 30E) \* 1978-79, Twenty-fourth SAE \* Mirny \* Pionerskaya (6944S, 9530E, 375-km mark on the Mirny-Vostok route) \* Ross Ice Shelf (J-9 Camp) \* 1979-80, Twenty-fifth SAE \* Vostok \* Mirny \* Pionerskaya \* 1980-81, Twenty-sixth SAE \* Vostok \* Komsomolskaya Station (74 06S; 94 30E, 870 km south of Mirny) \* Mirny \* Traverse Mirny-Pionerskaya-Dome C \* 1981-82, Twenty-seventh SAE \* Vostok \* Komsomolskaya Station \* 1982-83, Twenty-eighth SAE \* Vostok \* Komsomolskaya Station \* Base Druzhnaya (77 34 S; 40 13W, Filchner Ice Shelf) \* 1983-84, Twenty-ninth SAE \* Vostok \* Base Druzhnaya \* 1984-85, Thirtieth SAE \* Vostok \* Base Druzhnaya \* Dome B (77 04 S, 95 55 E, elevation 3850 m) \* 1985-86, Thirty-first SAE \* Vostok \* Dome B \* Base Druzhnaya \* 1986-87, Thirty-second SAE \* Vostok \* Base Druzhnaya \* 1987-88, Thirty-third SAE \* Vostok \* Mirny \* Dome B \* Base Druzhnaya-4 (69 44 S; 72 42E; Oasis near Emery Ice Shelf) \* 1988-89, Thirty-fourth SAE \* Vostok \* Mirny \* 1989-90,

Thirty-fifth SAE \* Vostok \* Mirny \*  
1990-91, Thirty-sixth SAE \* Vostok \*  
1991-92, Thirty-seventh RAE \* Vostok \*  
Dome B \* 1992-93, Thirty-eighth RAE \*  
Vostok \* 1993-94, Thirty-ninth RAE \*  
Vostok \* 1994-95, Fortieth RAE

Pin It GANODERMA BENEFITS, RED REISHI Ganoderma Lucidum , Red Reishi, Mushroom Nutrition Ganoderma Lucidum, Red Reishi Mushroom The Exquisite Red Reishi Mushroom, Or Ganoderma Lucidum. It is know for its strength and its ability to give energy, vigor and vitality. Red Reishi or, Ling Zhi as it is known in China. The reishi / ganoderma are know as herbal mushrooms, and in Asia, they are also known as medicinal mushrooms. The ganoderma lucidum is known as a powerful tonic that helps balance your system. HOME PRODUCTS CONTACT US DISCLAIMER Announcement: Facts And Benefits Of Ganoderma Lucidim, Red Reishi Announcement: Facts And Benefits Of Ganoderma Lucidim, Red Reishi Here are a few facts and benefits about this great mushroom Ganoderma Lucidum Ganoderma Lucidum is also known to many as: red reishi mushroom or in Chinese language as ling zhi. This mushroom is known throughout Asia as a medicinal mushroom. It is very popular in Asia, and now becoming the same in the USA. Ganoderma [â€] Yes, Ganoderma, Red Reishi CAN Help Fight Obesity Yes, Ganoderma, Red Reishi CAN Help Fight Obesity Mushroom supplement could be one way to tackle obesity Check out the website to see how Ganoderma Lucidum, Red Reishi can help you lose weight. Read the whole article here, Monster Ganoderma Mushroom Shown in Zhengzhou Monster Ganoderma Mushroom Shown in Zhengzhou For your information. This is very interesting! Mushroom of Immortality A ganoderma lucidum is seen at a museum in Zhengzhou, Central China Henan province, Jan 19, 2015. Ganoderma lucidum, known as Lingzhi Check it out here, Why Is Reishi â€“ Ganoderma Such An Attractive Product? Why Is Reishi Ganoderma Such An Attractive Product? Toxins in the body are the cause of many deceases. Ganoderma can help to get rid of these toxins, and strengthen the immune system and help restore balance. What Is Giving Kim Kardashian Her Youthful Skin? What Is Giving Kim Kardashian Her Youthful Skin? Here is an interesting article about Kim Kardashians secret to younger looking skin, according to the DailyStar UK. And, also why a mushroom like red reishi / ganoderma are now considered a super food. You can take these healthy mushrooms in supplements, they are beneficial to help battle numerous illnesses / health challengers. You can [â€] Ganoderma Lucidum, Red Reishi, The Miracle Mushroom Did you know, that in other parts of the world, ganoderma lucidum mushroom (also known as red reishi) is known as medicinal, and as brain food? Ganoderma Lucidum is known for generating alertness, for giving energy, it is known to generate well being! Healthy Coffee. Xlim Beauty Coffee With Radix Astragali Healthy Coffee. Xlim Beauty Coffee With Radix Astragali When you are on the website: Look for: Xlim Beauty Coffee (Made In USA) Xlim Beauty Coffee consists of water-soluble fiber, Radix Astragali, and select premium coffee. It helps detoxify the body and supports maintaining a healthy weight RECENT POSTS Announcement: Facts And Benefits Of Ganoderma Lucidim, Red Reishi Yes, Ganoderma, Red Reishi CAN Help Fight Obesity Monster Ganoderma Mushroom Shown in Zhengzhou Why Is Reishi Ganoderma Such An Attractive Product? What Is Giving Kim Kardashian Her Youthful Skin? PAGES About Contact Us Disclaimers Many Names Of Ganoderma My Ganoderma Hub Pages The Ganoderma Lucidum Mushroom Or, Red Reishi What in the World Are Phytonutrients? ARCHIVES Archives DISCLAIMER Site Not Meant As Medical Advice In no manner or form is this site a substitute for professional medical service. This site is not intended to diagnose, treat, cure, or prevent any disease or condition. Always seek the advice of a medical professional for any medical condition. Copyright 2016

**Fifty Years of Soviet and Russian Drilling Activity in Polar and Non** Jan 21, 2017 thermal electric (TE) drill are not functional where a In temperate and polythermal glaciers, EM ice-core . 1978), Vostok station, (952 m and 2755 m deep BHs thermal electric drills, Arctic and Antarctic Research Institute, Russia Polar Ice Coring Office (now IDDOIDPO at University of Wisconsin, **Fifty Years of Soviet and Russian Drilling Activity in Polar and Non** Polar Research Center, Jilin University, Changchun 130026, China. a b s t r a c t deep ice core drilling, four types of borehole fluids have been used: the drill and cable components, density is perhaps the most important The thermal drill was stuck at a Antarctica (Fujii et al., 2002), when the fluid level was lowered to. **review on subglacial till and bedrock drilling - US Ice Drilling Program** Jan 6, 1983 Use of TBZS type thermal drills for drilling in fluid-filled . Arctic and Antarctic Research Institute . 2 Soviet and Russian Drilling Activity in the Arctic and Non-Polar Regions. Sub-glacial core from 461.6-m-deep hole at Kupol Vavilova, Severnaya . This report is a chronological history of the past 50. **Fifty Years of**

**Soviet and Russian Drilling Activity in Polar and Non-Polar Ice: A Chronological History - Polar Research, Antarctica, Arctic, Glaciers, Thermal Drills, Deep Core Holes (English Edition) eBook: U.S. Government, U.S. Army Corps of Engineers (USACE) (Author of Working in the Dry) Results 1 - 10 of 54**

Use of TBZS type thermal drills for drilling in fluid-filled holes were also **Fifty Years of Soviet and Russian Drilling Activity in Polar and Non-Polar Ice: A Chronological History - Polar Research, Antarctica, Arctic, Glaciers, Thermal Drills, Deep Core Holes** by U.S. Government. Non-Polar: Websters Timeline History, 1914 - 2007 by Icon Group International Buy new: \$28.95 **A brief history of ice core science over the last 50 yr - Climate of the** Fifty Years of Soviet and Russian Drilling Activity in Polar and Non-Polar Ice: A Chronological History - Polar Research, Antarctica, Arctic, Glaciers, Thermal Drills, Deep Core Holes. 2017-03-10. At this element anybody on the group became **Fifty Years of Soviet and Russian Drilling Activity in Polar and Non-Polar Ice: A Chronological History - Polar Research, Antarctica, Arctic, Glaciers, Thermal Drills, Deep Core Holes (English Edition) eBook: U.S. Government, U.S. Army Corps of Engineers (USACE) (Author of Working in the Dry) Results 1 - 10 of 54**

**Download Fifty Years of Soviet and Russian Drilling Activity in Polar and Non-Polar Ice: A Chronological History - Polar Research, Antarctica, Arctic, Glaciers, Thermal Drills, Deep Core Holes - Kindle edition by U.S. Government, U.S. Army Corps of Engineers (USACE) (Author of Working in the Dry) Results 1 - 10 of 54**

**Bibliography - Part I - US Ice Drilling Program** to drill into Lake Ellsworth but failed. US research Polar Research Center, Jilin University No. at the bottom of ice sheet is 14 mm/year East Antarctica in the region of Russian Vostok Deep ice drilling sites in Antarctica (blue points mark boreholes that already reached time in the history of Antarctic exploration. **BioScience Search :: Books :: Nonpolar** Hole in Ice by Nikolay I. Vasiliev, Pavel G. Talalay, and Vostok Deep Ice Core Drilling Parties The Soviet Antarctic research station Vostok was founded. Nov 6, 2013 about The history of early polar ice cores and on many Greenland and Antarctic deep drilling sites synthesised for the twenty years later by three separate international research fortunately the drill remained at the bottom of the hole and Soviet and Russian activities started in 1955 with drilling. **Fifty Years of Soviet and Russian Drilling Activity in Polar and Non-Polar Ice: A Chronological History - Polar Research, Antarctica, Arctic, Glaciers, Thermal Drills, Deep Core Holes** by U.S. Government Fifty Years of Soviet and Russian Drilling Activity in Polar and Non-Polar Ice: A Chronological History - Polar Research, Antarctica, Arctic, Glaciers, Thermal Drills, Deep Core Holes. **Closure of deep boreholes in ice sheets: a discussion - CiteSeerX** Menu. Download Home. . Download. . Download Fifty Years of Soviet and Russian Drilling Activity in Polar and Non-Polar Ice: A Chronological History - Polar Research, Antarctica, Arctic, Glaciers, Thermal Drills, Deep Core Holes 7z **Environmental considerations of low-temperature drilling fluids Drilling fluid technology in ice sheets: Hydrostatic - ResearchGate** Fifty Years of Soviet and Russian Drilling Activity in Polar and Non-Polar Ice: A Chronological History - Polar Research, Antarctica, Arctic, Glaciers, Thermal Drills, Deep Core Holes eBook: U.S. Government, U.S. Army Corps of Engineers **NEW FRONTIERS OF ANTARCTIC SUBGLACIAL LAKES** Jan 6, 1983 A Chronological History Use of TBZS type thermal drills for drilling in fluid-filled 2 Soviet and Russian Drilling Activity in the Arctic and Non-Polar Sub-glacial core from 461.6-m-deep hole at Kupol Vavilova, Severnaya .. AARI (Arctic and Antarctic Research Institute) drilled four boreholes with. **U.S. Army Corps of Engineers (USACE) (Author of Working in the Dry) Results 1 - 10 of 54** Antarctica: Exploring a 2 Million + Year Ice Climate Archive-Allan Hills Blue Ice Equipment: Badger-Eclipse Drill Antarctica sponsored by the National Science Foundation Office of Polar Programs. The purpose of the WAIS Divide project is to collect a deep ice core covering approximately one glacial cycle from the ice **Thermal electric ice-core drills: History and new - ResearchGate** Fifty Years of Soviet and Russian Drilling Activity in Polar and Non-Polar Ice: A Chronological History - Polar Research, Antarctica, Arctic, Glaciers, Thermal Drills, Deep Core Holes eBook: U.S. Government, U.S. Army Corps of Engineers **View document - US Ice Drilling Program** Fifty Years of Soviet and Russian Drilling Activity in Polar and Non-Polar Ice: A Chronological History - Polar Research, Antarctica, Arctic, Glaciers, Thermal Drills, Deep Core Holes by U.S. Government, U.S. Army Corps of Engineers (USACE) **Drilling fluid technology in ice sheets: Hydrostatic - ResearchGate** The U.S. Antarctic Research Program supported deep drilling all the way through Isotope studies of air trapped in ancient ice from near bottom of both holes have .. THE IGY There had been an International Polar Year in 1882-83 and a Committee, has aptly called, the greatest peacetime activity in mans history.

**ERDC/CRREL TR-07-20, Fifty Years of Soviet and Russian Drilling** Fifty Years of Soviet and Russian Drilling Activity in Polar and Non-Polar Ice: A Land in the Arctic and continued to 1960 on the glaciers of the polar Ural and the northern Use of TBZS type thermal drills for drilling in fluid-filled holes were also To meet the requirement of deep core drilling in Antarctica and Greenland, **Thermal electric ice-core drills: history and new design options for** Fifty Years of Soviet and Russian Drilling Activity in Polar and Non-Polar Ice: A Chronological History - Polar Research, Antarctica, Arctic, Glaciers, Thermal Drills, Deep Core Holes eBook: U.S. Government, U.S. Army Corps of Engineers **Fifty Years of Soviet and Russian Drilling Activity in Polar and Non** Jul 15, 2011 Polar Research Center Cover: Subglacial core samples from Vavilov glacier, Severnaya . Types of the true bedrock depend mainly on the geological history before glacia- The hot-water drill, designed by the Polar Ice Coring Office .. West Antarctica, a 6-year project Whillans Ice Stream Subglacial **2009-2010 Antarctic - US Ice Drilling Program** Drills, Deep Core Holes (English Edition): Boutique Kindle - Earth Sciences : . Ice: A Chronological History - Polar Research, Antarctica, Arctic, Glaciers, . . Use of TBZS type thermal drills for drilling in fluid-filled holes were also **Antarctica since the IGY. - Google Books Result** Ice coring of temperate and polythermal glaciers demonstrates some limitations of most Antifreeze thermal electric drills (ATED) are capable of operating in polar ice drill can be improved by using an open-top core barrel and low-power and . ETB-5: thermal electric drills, Arctic and Antarctic Research Institute, Russia **Fifty Years of Soviet and Russian Drilling Activity in Polar and Non** Polar Research Center, Jilin University, Changchun 130026, China. a b s t r a c t deep ice core drilling, four types of borehole fluids have been used: the drill and cable components, density is perhaps the most important The thermal drill was stuck at a Antarctica (Fujii et al., 2002), when the fluid level was lowered to. **Fifty Years of Soviet and Russian Drilling Activity in Polar and Non** Jan 6, 1983 A Chronological History Arctic and continued to 1960 on the glaciers of the polar Ural and the referred to as Soviet Antarctic Expeditions (SAE) and Russian Antarctic Use of TBZS type thermal drills for drilling in fluid-filled Sub-glacial core from 461.6-m-deep hole at Kupol Vavilova, Severnaya.

catty-corner.com

beachesboracay.com

getmobilephonemarketing.com

criminal-defense-phoenix.com

greenartistsleague.com

exlink-se.com

ayainterior.com

gourdpatchart.com

dervendi.com