Peak Chatkal (ca. 5,700 m.), they consider inaccessible by ordinary mountaineering methods due to its nearly perpendicular hard rock walls affording no hand- or foot-holds.

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Pamirs. Beginning with the German-Russian Expedition of 1928 there have been to date five expeditions to the Pamirs. In 1928 the German alpinists of the expedition climbed the peak Merzbacher had named Mt. Kaufmann (7,130 m.), believing it to be the highest elevation in the Soviet Union. It was accordingly re-named Peak Lenin. From the summit was seen to the southwest, in the group known as Peter the Great Range, a high summit which was mistakenly identified as Peak Garmo (6,615 m.). Actually the map in the first edition of Younghusband's, "The Heart of a Continent," published in 1896, shows Mt. Kaufmann (now Peak Lenin) marked as 23,000 ft. high and to the southwest another elevation of 24,935 ft. For some reason this information was overlooked by the Russian mountaineers until 1931, when an expedition set out for Peak Garmo and discovered that the imposing summit seen from Peak Lenin was an entirely separate mountain higher than either. An expedition in 1932 definitely determined the position and altitude of this new highest elevation in the Soviet Union, and named it Peak Stalin. Its altitude is 7,495 m. or about 24,600 ft.

In the summer of 1933 a large expedition was sent to the Pamirs with the task of climbing Peak Stalin and setting up two meteorological stations as high as possible on its slopes. The approach to the mountain from the north is complicated by the necessity of having to cross the Muksu River, which, due to the heavy discharge from the melting glaciers, is extremely formidable throughout the spring and early summer. Thus it was not till mid-summer that the expedition could get under way. From the town of Osh in Tadjikistan, a four and a half days' trip was required to reach the terminus of the Fedchenko glacier, said to be forty-eight miles long, the largest in the U. S. S. R. Six horses loaded with equipment and supplies were then taken about thirteen miles up the glacier to the foot of Peak Stalin, where the base camp was established, at an altitude of 4,600 m. The climbing party consisted of eight alpinists and some native porters for work on the lower parts of the mountain. Besides the necessary climbing equipment, the party carried two portable meteorological stations, each weighing twenty-five pounds.

The first climbing camp was established at 5,400 m. Here the party lost one day due to bad weather. The third day, the second climbing camp was established at 5,600 m. At this point the hardest part of the climb began with an 800 m. ridge of hard steep ice broken by six very difficult gendarmes. The ice slopes

required almost continual step cutting and the gendarmes, which all had to be either traversed or circumvented, required the use of pitons and rope ladders. To add to the difficulty and danger, the gendarmes were composed of extremely bad rock affording poor holds and continually threatening to become dislodged. Here one member who was chairman of the Moscow Mountain Climbers group fell to his death. He had charge of carrying one of the meteorological stations and had taken it off his back to clear a route up a section of particularly bad rock. He was unroped at the time. In pulling away a loose rock he dislodged a large piece above it which rolled over, and flung him down the 500 m. slope. This accident was quickly followed by a second misfortune, for, while hunting for the body, another member of the party, a well-known Soviet athlete, caught a severe chill which later developed into pneumonia.

In spite of these accidents, steady progress up the mountain was made. The difficult 800 m. was ascended in three days with a climbing camp, the third, at 5,800 m., the fourth at 6,000 m., and the fifth at 6,400 m. Here the meteorological station was established. At this point the leader, Gorbunov, who was over forty years of age, was advised by his companions not to go higher. He replied that as they were not out for a record-breaking sport event, but fulfilling a scientific task set by the Soviet Government, he would continue higher. (Actually he proved to be one of the two men who finally reached the top.)

A sixth camp was made at 6,800 m., where two days were lost due to a heavy snow storm. At this point those below lost sight of the climbing party. On the tenth day of the ascent the final or seventh camp was established at 7,000 m.

Meanwhile further difficulties had arisen. Another man had one of his hands severely crushed when a piece of loose rock fell on it and only by dint of great control and the quick action of the others was saved from falling to his death. The accident made it impossible for him to continue the climb. Two other members of the party were also incapacitated at this point by mountain sickness and frozen feet.

Thus only three men started up the final 500 m. to the summit. The remaining meteorological station was proving increasingly difficult to carry and finally was set up and left at the 7,200 m. level. Continuing the climb toward the summit, another man was soon forced to give up due to the effect of the altitude on his heart. The other two, the oldest and the youngest on the expedition, went on and late in the afternoon of September 3rd reached the summit in almost exhausted condition. The last stretch was made very slowly and much of the time by crawling on hands and knees. A few observations were quickly made, photographs taken, and a record of the ascent placed in a food tin.

The descent was rapid and the 7,000 m. camp regained that night. Next day the combined parties reached the 5,600 m. level and the base camp a day later. The actual climb and descent of the peak had taken fourteen days. Five days later the party was back in Osh, having been gone a total of twenty-nine days.

There was stormy weather about half the time the party was on the mountain and considerable snow fell. As may be imagined, the temperatures recorded were very low; near the top the average was around 0° F. in the daytime and far below zero at night. The rock of Peak Stalin, as well as other mountains of Peter the Great Range, is extremely rotten and therefore particularly dangerous for a heavily loaded climbing party.

It is interesting to note that Peak Stalin (24,600 ft.) is the third highest summit that has been definitely reached. Kamet (25,450 ft.) being the first, and Minya Konka (ca. 24,900 ft.) the second.

More details should be given of that part of the work which had to do with establishing two high meteorological stations on the mountain, for this was one of the main objectives of the expedition. A central meteorological station had previously been located about sixteen miles up the Fedchenko glacier within thirteen miles of Peak Stalin, at an altitude of 4,857 m. (higher than the summit of Mont Blanc).

Here five men were stationed for year-round service, equipped with first-class instruments and a powerful radio apparatus for broadcasting the data obtained to the central meteorological stations of the U. S. S. R. It was to work in conjunction with this station, that two portable self-recording stations were built in Leningrad and set up on Peak Stalin at elevations of about 21,000 and 23,600 ft. These record temperature, barometric readings, and wind velocity by what is said to be an entirely new mechanism, as yet not fully tested. This unique apparatus has a windmill that generates electricity for an automatic radio sending equipment which periodically broadcasts the readings. These signals are then picked up by the main station on the Fedchenko glacier, where the data are properly correlated and relayed to the outside world by its powerful radio set.

These self-recording stations are expected to operate for about six months, after which there is doubt that they will be effective. At present it is hoped that another expedition may be sent to the mountain in 1934 to recover these stations and set them going again.

A second climbing party, under the leadership of Krylenko, the well-known attorney, made an attempt on Peak Krupski (6,200 m.). A party of three got to within 200 m. of the summit when a falling stone hit one of the group, breaking his rib, and making further advance impossible.

Complete reports of the mountaineering and scientific accomplishments of these Central Asiatic expeditions are being prepared in Moscow.

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Persia

The Italian Expedition composed of Ardito Desio, conte Leonardo Bonzi, Gaetano Polvara, cav. Vittorio Ponti, and Paolo Righini which set out by airplane on July 26th, 1933, to explore the mountains west of Isfahan has returned after having accomplished a vast amount of work but no account of their accomplishments has yet appeared. They were to explore the ranges on the Persian-Iraq border both from the air and on foot and had planned to make a number of climbs.

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Himalaya

Mount Everest. The expedition of this last summer led by H. Ruttledge and composed of C. G. Crawford, Captain E. St. J. Birnie, Major Hugh Boustead, P. Wyn-Harris, Dr. C. R. Greene, Dr. W. W. McLean, J. L. Longland, E. E. Shipton, E. O. Shebbeare, F. S. Smythe, G. Wood-Johnson, T. Brocklebank, and L. Wager left England somewhat earlier than the previous expeditions, the first party sailing January 20th. Leaving Darjeeling in two groups March 2nd and 8th, they combined at Gautsa the 21st and arrived at the Rongbuk Monastery on April 16th. The base camp was established the next day and the next month was spent in the advance up the glacier, which was hampered by bad weather so that the camp on the North Col was not set up until May 15th. Camp V at 25,700 ft. was established a week later and then bad weather again drove the party down so that it was not until May 29th that Camp VI was set up at an altitude of 27,400 ft. The next day Harris and Wager made a try for the summit, but after spending some time in trying to climb the second step in the ridge directly they were forced to traverse and owing to the shortness of the time left had to return to camp. On June 1st, Smythe and Shipton set out from the high camp to follow Norton's route which was now accepted as the best way, but after climbing several hundred feet Shipton gave out and Smythe pushed on alone for another hour, finally reaching an altitude of about 28,000 ft., when realizing the impossibility of reaching the summit and returning to camp turned back and picked up Shipton. They followed the ridge back to camp and found an ice-axe on the steeply sloping ledges just below the crest. This axe was a Willisch axe of which there were a number on the 1924 expedition and has been tentatively identified as Mal-