1. Introduction.

This is a version of the notes for my class "Hyperbolic Manifolds and Discrete Groups" which I was teaching at the University of Utah during the academic year 1993-94. I am thankful to Mladen Bestvina, Noel Brady, Steve Gersten, Andre Szabo, Domingo Toledo and Andrejs Treibergs for patience, interesting questions and suggestions. Several conversations with Mladen Bestvina were especially important. I am also grateful to Bernhard Leeb and John Millson: some of the ideas of our joint works I had used in these Notes.

1.1. Big Monster.

Thurston's Hyperbolization Theorem ("Big Monster"). *Suppose that M is a compact Haken atoroidal 3-manifold, whose boundary has zero Euler characteristic. Then the interior of M admits a complete hyperbolic metric of finite volume.* (See the Chaper 2 for definitions.)

About completeness of Big Monster's proof.

Thurston had announced this theorem about 20 years ago, but did not write a complete text of the proof. A proof of the "Big Monster" existed, however it was similar to an unfinished building. It was "almost done", but at the very end the contractor had lost interest in the project and went out of the construction business for good. To finish the work you just have to put walls together, get the door and window frames from an independent contractor from Kalamazoo; eastern and western walls do not fit (one was built using the Old British Imperial System and the other using the Metric System), so you use a piece of the Berlin Wall instead; then you discover that pipes were hidden so well that you have to put new ones; finally to find the missing roof you should go to the town of Red Bluff, take the right turn after the second traffic light: the roof was left under the old bridge, hopefully it is still there.

In these lecture notes I will bring different pieces of the proof together and complete the "construction work". During the Autumn quarter (of 1993) I have learned that J.-P.Otal and F.Paulin are preparing books [OP] and [O] with complete proofs of the Hyperbolization Theorem. Unlike these Notes, the approach of [OP] is analytical, it is based on McMullen's proof of the Bounded Image Theorem. Otal's preprint became available in 1994 and I will use some parts of his preprint.