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BEING A GRADUATE STUDENT OF MICHAEL ATIYAH

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I became Michael Atiyah's graduate student in 1963. My life was immediately transformed, and in retrospect I can hardly believe my good fortune, for at that time I had heard little more about my new supervisor than that he was the only person around likely to take on a floundering late applicant. Michael was then 34, which again is hard for me to imagine, for although he was very benevolent and approachable, and in no way intimidating, he had nevertheless a colossal presence and air of authority, and all the department was in awe of him - it was many, many years before I ventured to call him 'Michael'.

I seem to remember that there were at least six Atiyah students at that time, some official and some de facto. He would direct his abounding energy at each of us in turn. I remember how inspired I felt after each meeting, but on the whole we students used to hide from him, for if he ran into us in the corridor and found that we hadn't made much progress with yesterday's suggestions he would pour forth a torrent of new lines for us to try. At the same time he always left us feeling there was something worthwhile we could do; however wrong were the ideas we came up with, he never crushed us, but made our muddle seem like steps in the right direction. I have often thought about this wonderful ability to be encouraging, and how inimitable it is, when seeing myself having just the opposite effect on my own students. (Another thing I often wondered about was when the Atiyah papers were written: for he seemed to be talking to people all day long.)

The mathematical orientation I learnt from Michael as a graduate student has stayed with me ever since. Its main principle was the primacy of geometry. After that, one was interested in understanding why things were true, was not very interested in details, and was not interested at all in taxonomy. One cannot imagine an Atiyah theorem with complicated hypotheses or conclusions, or one which involves elaborate classification. That was especially true at the time when I was a student, for then Atiyah and Singer were engaged in the search for a truly natural treatment of the index theorem. This pursuit of naturality accorded with the spirit of the new age inaugurated by Grothendieck; but Atiyah differed sharply from Grothendieck in eschewing elaborate abstract machinery.

I have learnt a vast amount of mathematics from Michael, first when I was his student, and then later when we were colleagues at St. Catherine's College (together, successively, with Elmer Rees and Nigel Hitchin). But probably the most fundamental thing I learnt was an attitude: for Michael, no part of mathematics worth knowing was so technical or remote that one could not be put completely in the picture by the right twenty-minute account. He was wonderful at keeping to the high ground and avoiding the mire: talking to him, one always felt a failure if one needed to use a blackboard to explain something. Among the less standard pieces of advice he gave his students in my day was "Never read things. It will only make you depressed. If you need to know something, just ask me."

My whole mathematical life has been under Michael's tutelage, and I owe him more than I can express for his encouragement, his great generosity with his ideas, and many other kindnesses over the years.

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