In 1979, H. W. Lenstra defined the notion of an Euclidean ideal class and proved that if a number field $K$ has a non-principal Euclidean ideal class then the ideal class group $\text{Cl}_K$ of $K$ is cyclic. Except for the imaginary quadratic fields, he was able to prove the converse, under the assumption of GRH. Later, H. Graves constructed an explicit biquadratic field having an Euclidean ideal class and after a few years C. Hsu provided a family of such fields. In this talk, we shall give a new class of biquadratic fields other than the ones given by Graves and Hsu. This is a joint work with Dr. M. Subramani.